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INDUSTRIAL MEDICINE

Volume 18 May 1949 Number 5

For mixed infections

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how to ASPIRATE with the ampin

It's easy to aspirate with an *AMPIN** in making an intramuscular injection—easier—because it can be done with one hand—the same hand that inserts the *AMPIN* needle. The following procedure has been clinically approved:

1. Grasp hub of needle between thumb and index finger. Insert *AMPIN* needle deep into the muscle selected (preferably the gluteus maximus). *AMPIN* must be in "BOTTOMS UP" position.

2. Flatten rubber tube just above needle hub by pressing firmly with same thumb and index finger and then release pressure quickly.

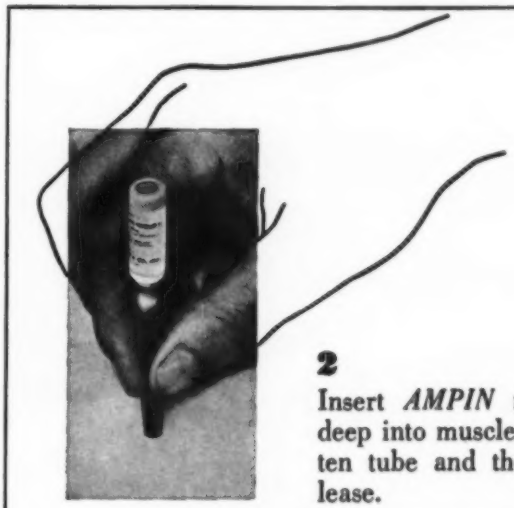
3. If in vein, blood will show in tubing at top of needle hub. In this case flatten tube again to expel blood. Withdraw needle and immediately re-insert at a slight angle to avoid vein and re-aspirate.

4. If no blood appears, slide thumb up to base of ampule bulge and, using index and second finger, snap ampule tip by applying thumb pressure (as if breaking a matchstick with the fingers).

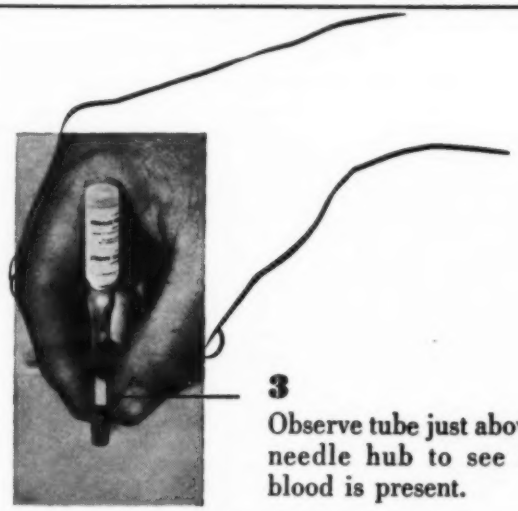
Do not pinch the neck of the ampule.
Snap it like a matchstick.

Remember to keep the *AMPIN* in a "bottoms up" position.

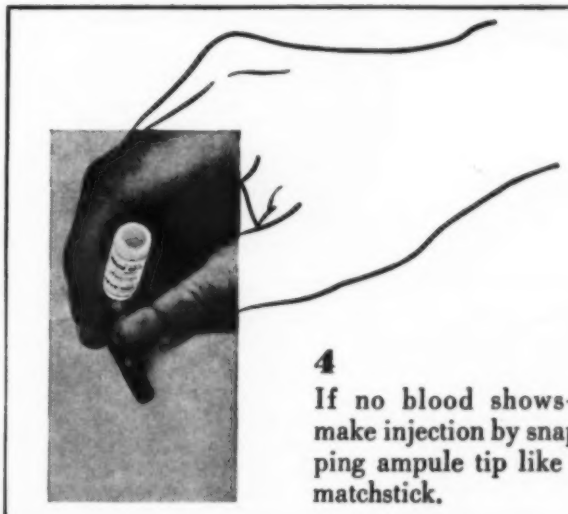
1
After sponging injection site, grasp hub of needle between thumb and index finger. Remove needle cover.



2
Insert *AMPIN* needle deep into muscle. Flatten tube and then release.



3
Observe tube just above needle hub to see if blood is present.



4
If no blood shows—make injection by snapping ampule tip like a matchstick.

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The Journal of Industrial Health, Occupational Medicine and the Surgery of Trauma

With which are consolidated "The Industrial Doctor" and "International Journal of Medicine and Surgery"

This magazine is published to promote sound thought upon and concerning industrial medicine and traumatic surgery. To that end it will contain articles, news items, reports, digests, and other presentations, together with editors' comments. The editorial policy is to encourage frank discussion. On this basis contributions are invited. The editors will exercise care in checking on the accuracy of data printed but in all other respects articles and opinions of which expression is allowed are the opinions of their authors—the editors reserving in all cases the right to comment on the same in the current or any subsequent issues as they may be inclined.

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THE Thirty-Fifth Annual Meeting of the AMERICAN ASSOCIATION OF INDUSTRIAL PHYSICIANS AND SURGEONS, together with the 1950 INDUSTRIAL HEALTH CONFERENCE will be held in Chicago, Illinois, April 23 to 29, 1950, with headquarters at the Hotel Sherman.

1949 Railway Surgeons Conference, Chicago

THE Sixty-First Annual Meeting of the AMERICAN ASSOCIATION OF RAILWAY SURGEONS will be held at the Drake Hotel in Chicago, Illinois, June 30-July 2, 1949.

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NEWS

ON WEDNESDAY, March 16, 1949, the Massachusetts Medical Society held one of their Post-Graduate sessions at Harvard at which time the session was on Industrial Medicine and the two chairmen were DR. HENRY MARBLE and DR. DANIEL L. LYNCH. After the session, 19 doctors, most of them from the NEW ENGLAND CONFERENCE OF INDUSTRIAL PHYSICIANS AND SURGEONS, together with the panel speakers, went to the Hotel Continental, Cambridge, for dinner and a round-table discussion. Included was DR. CARL M. PETERSON, of Chicago.

New England Conference

THE spring meeting of the NEW ENGLAND CONFERENCE OF INDUSTRIAL PHYSICIANS AND SURGEONS was held April 27, 1949, at Yale University School of Medicine, New Haven, under the sponsorship of the Connecticut State Medical Society, the State Department of Health and the university. Papers were presented on "Cardiac and Vascular Disease, Their Industrial Significance." Out of state speakers were DR. ARTHUR M. MASTER, New York, on "Coronary Artery Disease, Pathogenesis with Consideration of Relationship of Effort to Myocardial Infarction," and DR. HUGH MONTGOMERY, Philadelphia, "Obliterative Disease of the Arteries." The subject of the dinner address at 7:00 P.M. was "Education in Industrial Health and Public Health."

Central States Program

THE 1949 Annual Meetings of the CENTRAL STATES SOCIETY OF INDUSTRIAL MEDICINE AND SURGERY and the CHICAGO SOCIETY OF INDUSTRIAL MEDICINE AND SURGERY will be held at the Palmer House in Chicago on Sunday, May 15. Following the business meetings and elections of officers, the joint program, under the direction of DR. H. GLENN GARDINER, chairman of the program committee will include:

"Taking the Brrr Out of Beryllium"—HERBERT T. WALWORTH, Director, Industrial Hygiene Division, Lumbermen's Mutual Casualty Company.

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PANEL DISCUSSION OF MEDICAL ECONOMICS—Moderator, D. ORIS CONLEY, M.D., President, CENTRAL STATES SOCIETY OF INDUSTRIAL MEDICINE AND SURGERY:

"The Point of View of Organized Labor"—Speaker to be announced.

"The Point of View of the Employers"—Speaker to be announced.

"The Point of View of Organized Medicine"—THOMAS V. McDAVITT, Director of Personnel Relations, American Medical Association.

"The Point of View of the Industrial Physicians"—JOSEPH H. CHIVERS, M.D., Chairman of the Committee on Industrial Health of the Illinois State Medical Society.

Pensions for Alcoholics

THE Consolidated Edison Company has for five years regarded chronic alcoholism as a disease and has been retiring victims on a pension commensurate with their pay and years of service, as though they were afflicted with tuberculosis, locomotor ataxia or cataracts. DR. JOHN J. WITTMER, assistant vice-president in charge of industrial relations, and medical supervisor of the company, stated that the adoption of the policy seemed to have had no effect on the prevalence of alcoholism. Either a man was a victim of the "disease," or he wasn't, and the prospect of retirement on a pension did not enter into the situation. The differentiation between the drinker and the victim of alcoholism, he said, was made on the basis of control. The man who occasionally drank to excess was not necessarily an alcoholic, but if habitually one drink led to another, until the man was incapacitated, a diseased condition was indicated and he came up for consideration for retirement. The diagnosis of chronic alcoholism had about tripled since recognition of this affliction as a cause for retirement, but the number of per-

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BIBLIOGRAPHY: (1) Welebir, F., and Barnes, R.W.: J.A.M.A. 117:2132, 1941. (2) Alyea, E.P., and Parrish, A.A.: South. M.J. 40:678, 1947. (3) Lehr, D.: J. Urol. 54:87, 1945. (4) Prentiss, R.J., and Kanealy, J.F.: J. Urol. 47:11, 1942.

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April 23-29, 1950, Chicago.

American Industrial Hygiene Association, 4400 Fifth Ave., Pittsburgh 13, Pa. HENRY F. SMYTH, JR., Executive Secy.
April 23-29, 1950, Chicago.

American Medical Association, Council on Industrial Health, 535 North Dearborn St., Chicago 10, Ill. CARL M. PETERSON, M.D, Secretary.

sons retired remains about the same. In DR. WITTMER'S opinion, the reason is that formerly a symptom of alcoholism, such as high blood pressure, kidney trouble or cirrhosis of the liver, had been given as the cause for retirement, whereas now the basic cause was given as the reason. "We consider chronic, irretrievable alcoholism as a disabling condition," he said, "because we feel that the basis for alcoholism is due to a definite pathological condition." The decision to retire rather than dismiss the victim, was based, of course, on his length of service. A man who had been employed two years or less might be dismissed. A man of longer service might be warned and placed, as it were, on probation for a period.

—*New York Herald-Tribune*, April 12, 1949.

DR. A. H. WATERHOUSE, Koloa, Kauai, Territory of Hawaii, an honorary member of the AAIP&S, died, as reported in a letter from the secretary of the Hawaiian Association, on January 3, 1949. He was one of the oldest industrial physicians, having rendered plantation medical service for more than 30 years.

WORD comes from the Florida Association that DR. FREDERICK W. KRUEGER, of Jacksonville, Florida, died at the age of 51 years from coronary heart disease. He graduated from the University of Nebraska School of Medicine in 1926; was on the staff of St. Luke's Hospital, Jacksonville, Florida, and served his country during World War I in the Armed Forces.

American Medical Association, 535 North Dearborn St., Chicago 10, Ill. GEORGE F. LULL, M.D., Secretary & General Manager.

American Public Health Association, 1790 Broadway, New York 19, N. Y. REGINALD M. ATWATER, M.D. Executive Secretary.
November 8-12, 1949; Boston.

Association for the Surgery of Trauma.

Canadian Public Health Association, Vancouver, B.C., Canada.

Council on Industrial Health, American Medical Association; Secretary: CARL M. PETERSON, M.D., 535 N. Dearborn St., Chicago 10.

Industrial Hygiene Foundation of America, 4400 Fifth Ave., Pittsburgh 13, Pa. JOHN F. MCMAHON, Managing Director.
November 17-19; Pittsburgh.

International Association of Industrial Accident Boards & Commissions. MARSHALL DAWSON, U.S. Dept. of Labor, Washington, D.C., Secretary-Treasurer.
September 12-18; New York.

Lead Industries Association, 420 Lexington Ave., New York 17, N.Y. ROBERT L. ZIEGFELD, Secretary-Treasurer.
November 15-16; Chicago.

National Council on Rehabilitation; Secretary-Treasurer: MR. HOLLAND HUDSON, 1790 Broadway, New York 19.

National Metal Congress, Philadelphia.
October 25-28; Philadelphia.

National Rehabilitation Association, 411-7th Ave., Nashville 4, Tenn. LOUIS R. SCHUBERT.

National Safety Council, 20 North Wacker Drive, Chicago 6, Ill. NED H. DEARBORN, President; CARMEN FISH, Secretary.
October 18-22; Chicago.

National Tuberculosis Association, 1790 Broadway, New York 19, N. Y. H. STUART WILLIS, Secretary.

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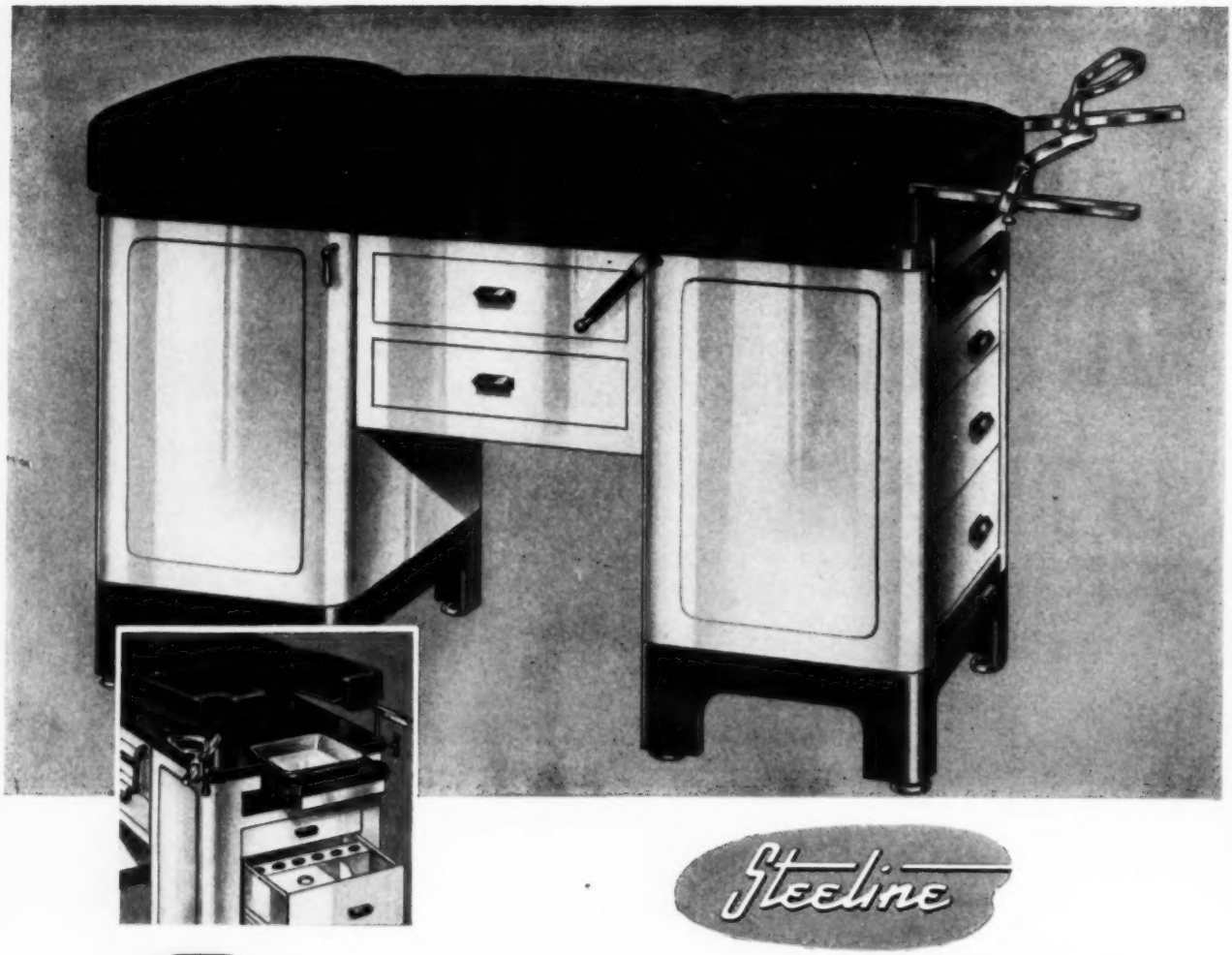

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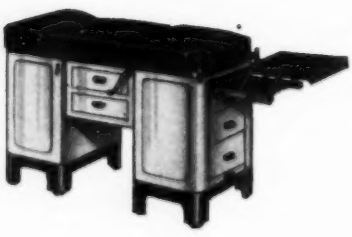

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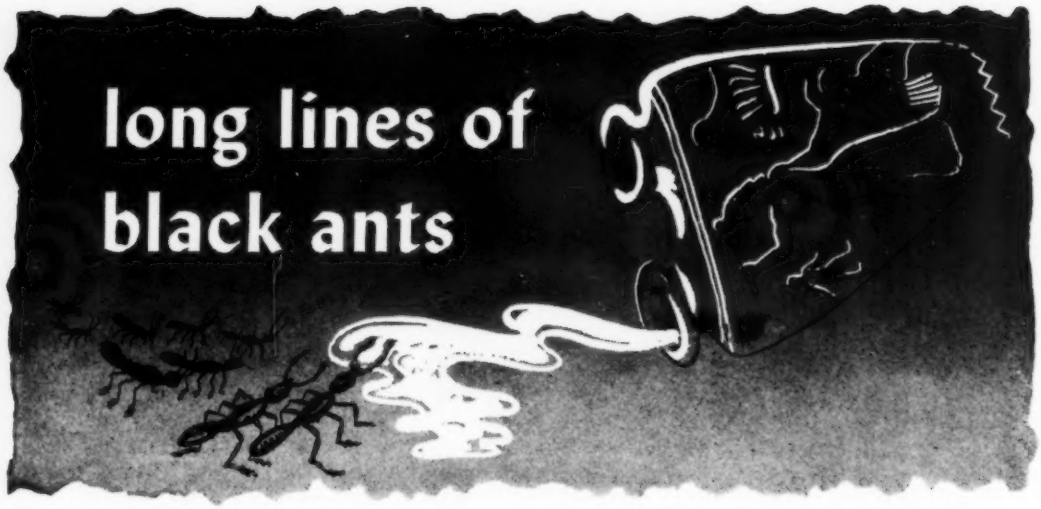

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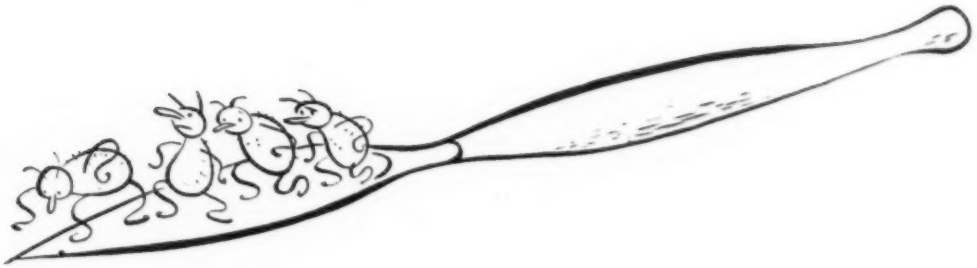

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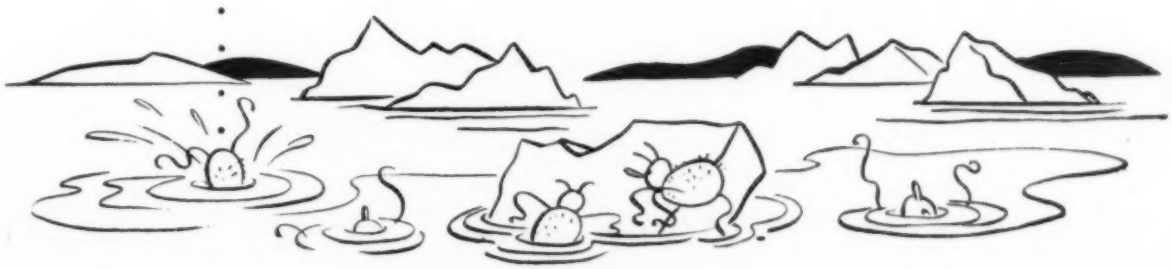

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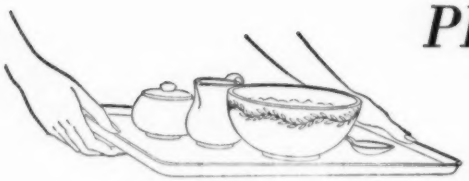

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The breakfast cereal serving—breakfast cereal, milk, and sugar—is singularly adapted to the nutritional needs in illness and convalescence when the diet frequently has to be limited. Its nutrient content of protein of high biologic value, of carbohydrate and fat, and of vitamins and minerals is exceptionally well balanced. Its appealing taste makes it a universally accepted favored dish. The many kinds of breakfast cereals available make for welcome variety. Because of its bland taste, the cereal serving blends readily with all other foods.

The nutrient composition of the breakfast cereal serving made from 1 ounce of breakfast cereal,* 4 fluid ounces of milk, and 1 teaspoonful of sugar is shown in the table.

The presence of this seal indicates that all nutritional statements in this advertisement have been found acceptable by the Council on Foods and Nutrition of the American Medical Association.

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PROTEIN	7.1 Gm.	IRON	1.6 mg.
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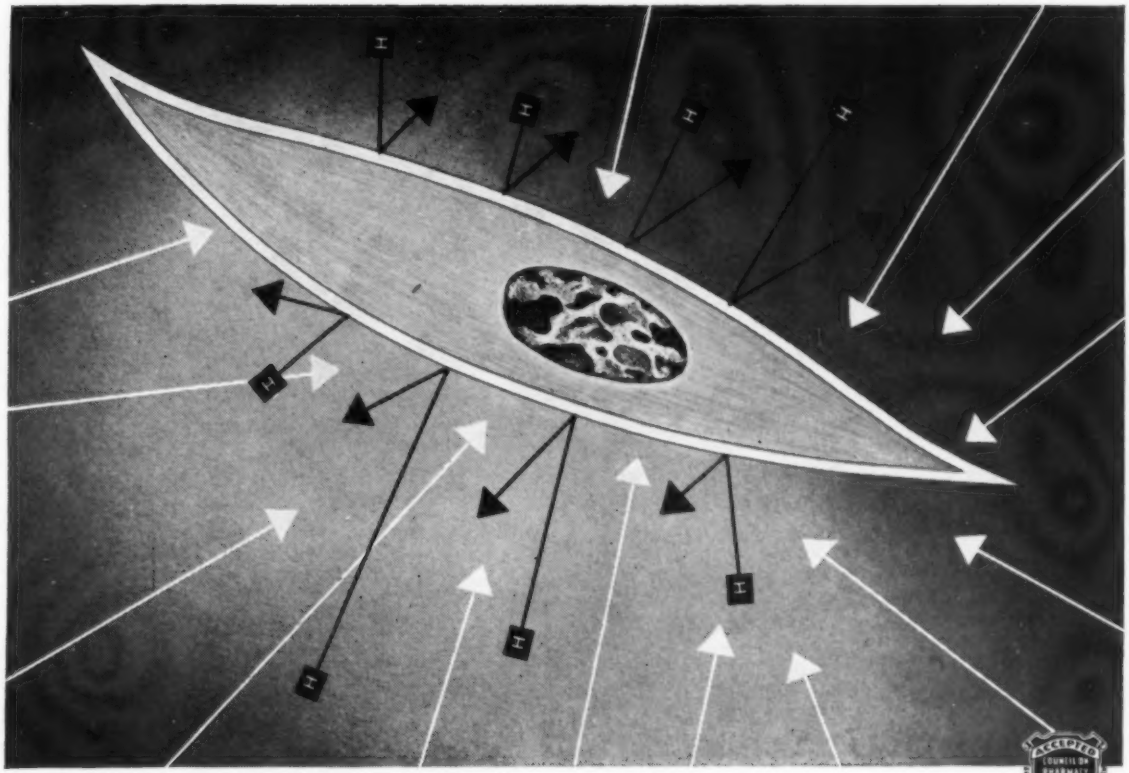

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To bring new safety to the treatment of hay fever...

Neohetramine is less toxic than other available antihistaminics; its lower toxicity is quantitatively more pronounced than its lower effectiveness.

And Neohetramine may be useful in patients in whom the other drugs produce marked sedation or other undesirable side-actions.

So prescribe Neohetramine to bring new safety to the treatment of hay fever and other allergic conditions.

Supplied—Tablets 25 mg., 50 mg., and 100 mg. Syrup 6.25 mg. per cc. 16-oz. bottles.

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This powerful disinfecting solution is free from phenol (carbolic acid) and mercurials. It is a chlorinated phenyl compound that is unusually effective in its rapid destruction of commonly encountered vegetative bacteria (except tubercle bacilli) as shown in the chart.

PRICE
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Per Quart . $1.75

B-P instrument container No. 300 is recommended as the ideal office container for use with the Solution.

Check these additional features—

- Non-injurious to metallic instruments or keen surgical edges.
- Low volatility . . . will not irritate eyes, nose or throat.
- Will not stain fabrics, skin or tissue.
- Will not dry and fissure hands or skin areas if exposed repeatedly. (Chlorophenyl is not to be used therapeutically.)
- Stable . . . will retain potency over long periods.

Compare the killing time of this superior bactericidal agent

Vegetative Bacteria	50% Dried Blood	Without Blood
Staph. aureus	15 min.	2 min.
E. coli	15 min.	3 min.
Strept. hemolyticus	15 min.	15 sec.

Ask your dealer

PARKER, WHITE & HEYL, INC.
Danbury, Connecticut

B-P

A BARD-PARKER PRODUCT

Percutaneous Penetration with

ARTHRALGEN T.M.

Arthralgesic Unguent

A *single* application of Arthralgen by deep massage affords rapid and sustained relief of the pain, stiffness and disability associated with articular and non-articular rheumatic disorders. Vasodilatation due to methacholine chloride, rubefaction due to thymol and menthol, analgesia due to methyl salicylate—these pharmacologic effects of Arthralgen are translated clinically into effective relief of muscle and joint pain within a few minutes of application. This remarkably rapid action is favored by selected wetting agents in the ointment base, which lower surface tension and assure quick and thorough penetration. The hyperemia resulting from the synergistic influence of the active ingredients prolongs the duration of effect, which can be further extended up to *six* hours by concomitant exposure of the affected parts to moist or dry heat.

ARTHRALGEN ***is highly effective*** in fibrositis, whether occurring in the fibrous insertions and aponeuroses of muscles (myositis, lumbago), or in the joint capsules and bursae (synovitis, bursitis), or in the supporting structures of nerves (neuritis, sciatica). It is useful, also, as adjunctive treatment in rheumatoid arthritis during the early phases of systemic therapy. Since Arthralgen does not contain histamine, it is relatively free from such untoward side effects as itching, urticareal wheals or profound drop in blood pressure.

Packaging: One-ounce tubes on prescription and half-pound jars for office and institutional use.

Arthralgen contains methacholine chloride 0.25%, thymol 1%, menthol 10%, and methyl salicylate 15% in a highly absorbable, washable emollient base.

Whittier

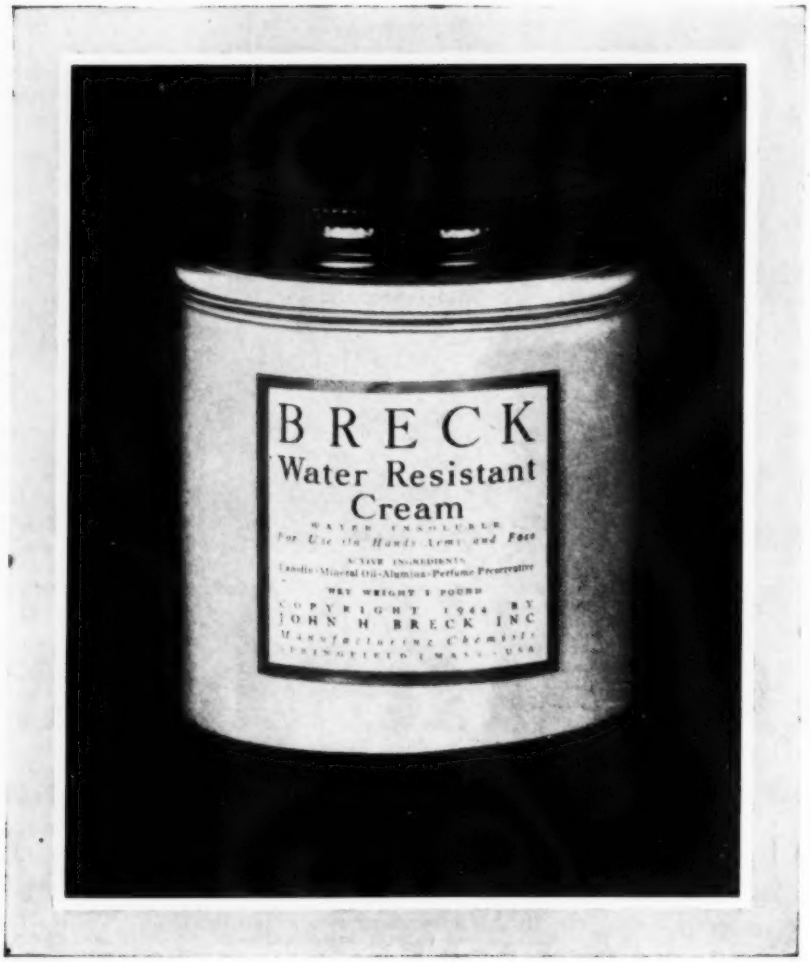
LABORATORIES

DIVISION

NUTRITION RESEARCH LABORATORIES

CHICAGO 30, ILLINOIS

B R E C K



Breck Water Resistant Cream

Many skin irritations caused by water or water soluble substances can be prevented by protecting the hands. Breck Water Resistant Cream forms a protective film on the hands that lasts from three to four hours. This cream is recommended for both industrial and professional work that requires contact with irritating solutions.

Literature and samples will be sent upon request.

JOHN H BRECK INC . MANUFACTURING CHEMISTS . SPRINGFIELD 3 MASSACHUSETTS
CANADIAN ADDRESS 310 SLATER STREET OTTAWA

HAY FEVER *relief* day and night...

The extra long action of Neo-Synephrine hydrochloride makes possible control of hay fever symptoms with infrequent dosage, thus enabling the patient to be comfortable during the day and obtain sleep at night.

Average dose: 2 or 3 drops in each nostril.

No appreciable interference with ciliary action. Virtually no side reactions.

FOR NASAL USE: ¼% solution (plain and aromatic), 1 oz. bottles; 1% solution, 1 oz. bottles; ½% water soluble jelly, ⅝ oz. tubes.

FOR OPHTHALMIC USE: ⅛% low surface tension, aqueous solution, isotonic with tears, 15 cc. bottles.

NEO-SYNEPHRINE®
HYDROCHLORIDE
Brand of phenylephrine hydrochloride

Winthrop-Stearns INC.
NEW YORK 13, N. Y. WINDSOR, ONT.

Neo-Synephrine, trademark reg. U.S. & Canada

evidence

DOLOPHINE HYDROCHLORIDE VS. MORPHINE

DOLOPHINE HYDROCHLORIDE (Methadon Hydrochloride, Lilly)	MORPHINE
More effective relief from pain (one-third less drug required)	More euphoria
Less costly	Less suitable for the control of cough

DOLOPHINE HYDROCHLORIDE

dosage:

For moderate pain, 2.5 mg. orally; more severe pain, 5 mg. orally or subcutaneously; very severe pain, 10 mg. subcutaneously. Repeated every four to six hours as necessary.

how supplied:

- **Tablets 'Dolophine Hydrochloride,' 2.5 mg., 5 mg., 7.5 mg., and 10 mg., in bottles of 100 and 1,000**
- **Ampoules 'Dolophine Hydrochloride,' 5 mg., 1 cc., and 10 mg., 1 cc., in packages of 12 and 100; and 10 mg. per cc., in individual 20-cc. rubber-stoppered ampoules**
- **Syrup 'Dolophine Hydrochloride,' 10 mg. per 30 cc., in bottles of one pint and one gallon**
- **Powder 'Dolophine Hydrochloride,' in bottles of 15 and 30 grams**
- **Suppositories 'Dolophine Hydrochloride,' 10 mg., in packages of 12**

*Narcotic order required.

Literature on 'Dolophine Hydrochloride' is available to physicians from Lilly medical service representatives or will be forwarded upon request.

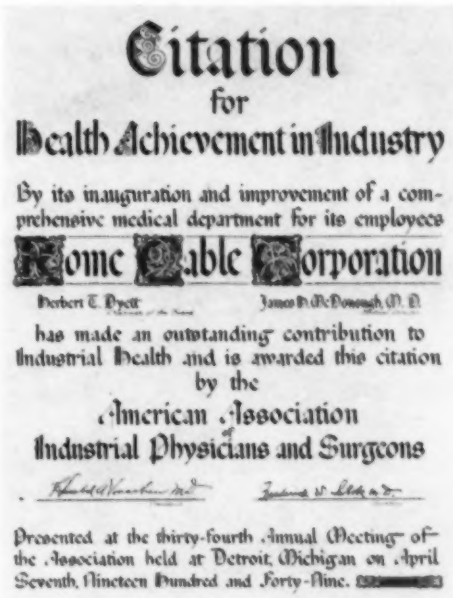
ELI LILLY AND COMPANY
Indianapolis 6, Indiana, U.S.A.

INDUSTRIAL MEDICINE

Volume 18 MAY 1949 *Number 5*

Citation for Health Achievement in Industry Awarded to Rome Cable Corporation, Rome, New York

THE CITATION for Health Achievement in Industry—given by the AMERICAN ASSOCIATION OF INDUSTRIAL PHYSICIANS AND SURGEONS in recognition of the establishment and/or improvement of employee medical services by an industrial concern—was awarded for 1948 to ROME CABLE CORPORATION, of Rome, New York. The award was made at the 34th Annual Meeting, at Detroit, on April 7, 1949. DR. HAROLD A. VONACHEN, President of the Association, presented the Citation to A. D. ROSS FRASER, President of Rome Cable Corporation, at the Association's Annual Banquet.



Citation
for
Health Achievement in Industry

By its inauguration and improvement of a comprehensive medical department for its employees

Rome Cable Corporation

Herbert T. Dyett — James D. McDonough, M. D.

has made an outstanding contribution to Industrial Health and is awarded this citation by the

American Association of Industrial Physicians and Surgeons

Harold A. Vonachen, M.D. — Louis H. Kelly, M.D.

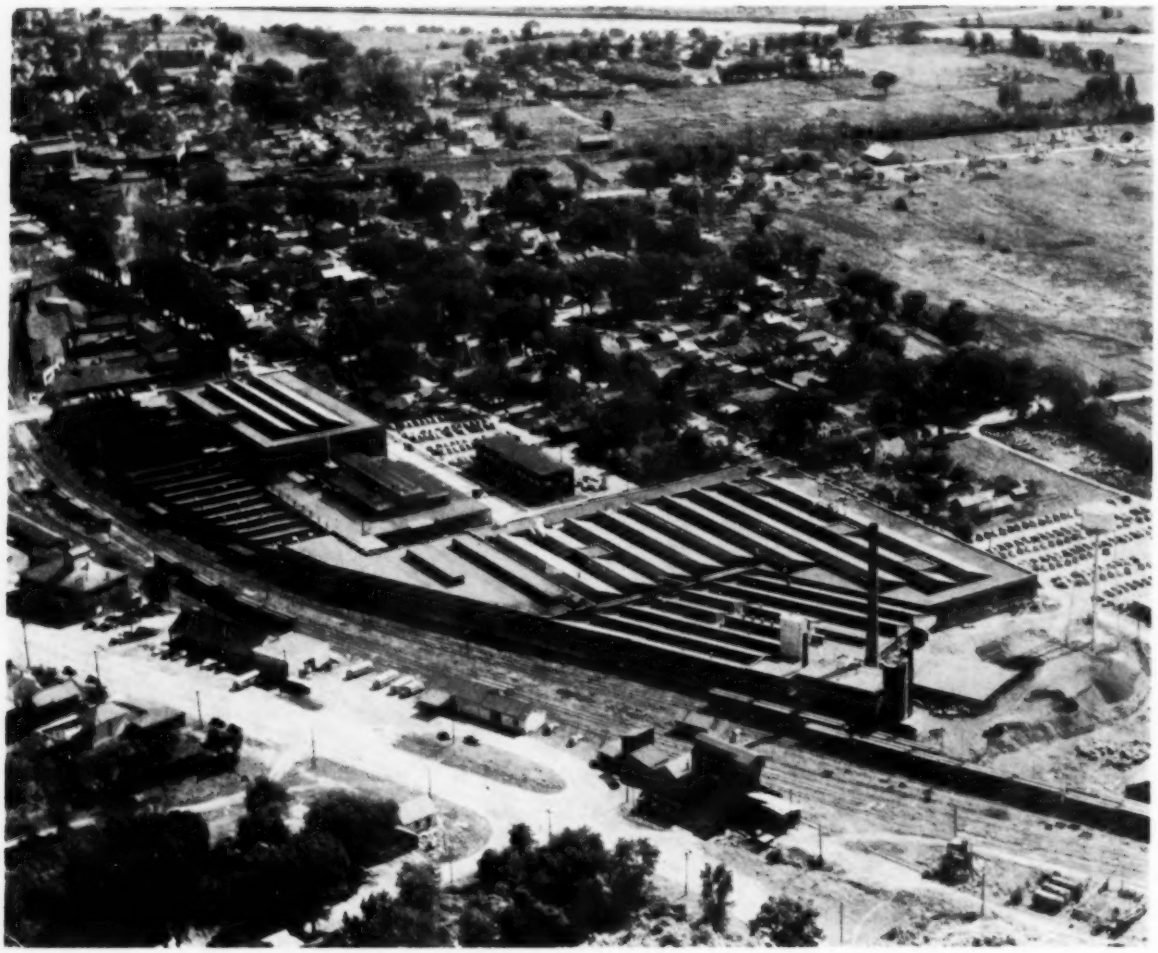
Presented at the thirty-fourth Annual Meeting of the Association held at Detroit, Michigan on April Seventh, Nineteen Hundred and Forty-Nine.

ROME CABLE CORPORATION is an independent manufacturer of electrical wires and cables; it has no other company affiliations. Its plant, executive headquarters and research laboratory are in Rome, in central New York, 15 miles west of Utica, and at the head of the historically rich Mohawk Valley.

Known as "The Copper City," Rome, with a population of about 40,000, processes one-tenth of all the copper mined in the United States. It has a long tradition as a metal-working center; a brass and copper company was founded there in 1866, and in 1883 the first copper wire produced there was made by a concern whose output was a hundred pounds a week—a quantity now drawn by high-speed machines in a few minutes.

ROME CABLE was incorporated in 1936 by a group with long experience in the making of wire and cables. Under the guidance of its founder and present Board Chairman, HERBERT T. DYETT, the company has expanded its line of products so that, in addition to the extensive research laboratory and engineering and testing facilities, the manufacturing operations now cover about 600,000 square feet. The company is one of the relatively few wire and cable makers having their own rod rolling mills. Starting with the hot rolling of the copper bar as received from the refinery, its operations continue throughout the cold drawing and rolling, annealing, tinning, and stranding of the wires, as well as the numerous other processes involved in their fabrication for use by public utilities, communication services, railroads, mines, shipbuilders, manufacturers of electrical appliances and equipment, builders of residential and industrial structures, and the various government agencies. And vast quantities of many raw materials—rubber, thermoplastic resins, lead, tin, waxes, cotton, asbestos, paper, jute, glass, lacquers—as well as the supplementary ingredients required for their proper compounding, go into the making of the finished products, which cover a broad field of electrical applications in high and low voltage service, ranging from the transmission of heavy power loads to the intricate and highly specialized wiring of radio and electronic circuits.

PREVENTIVE medicine recognizes "that it is easier to treat early diabetes than the later stages of the disease; easier to keep in good shape the heart of the patient examined before decomposition has set in; easier to save life when the carcinoma is detected before metastasis has occurred; easier to heal a small and new gastric ulcer than an old and deep one." But "will the doctor really give an adequate study to the patient who has no complaints—only a desire for



Rome Cable Corporation's Plant

a 'thorough check-up'?" The answer is that he will if he is given the time, the purpose and the opportunity. In the proper atmosphere, and with patience, interest, professional competence, and imagination, he will find the diabetes, the failing heart, the carcinoma, the gastric ulcer, the tuberculosis, and whatever else is developing *in time to minimize the consequences.* The AAIP&S Committee which was charged with the selection of the industrial situation to receive the 1948 Citation for Health Achievement in Industry included DR. C. RICHARD WALMER, Chairman, (Industrial Hygiene Foundation), DR. JAMES M. CARLISLE (Merck & Co.), DR. L. A. WHITAKER (Weirton Steel Co.), DR. FREDERICK H. SHILLITO (Pan American World Airways), and DR. JOHN NEILSON, JR. (Union Carbide & Carbon Corp.). Each of these men has his own background of successful industrial medical practice; each knows from experience the necessary components of a preventive-medicine program. After an objective study of a number of the more recent medical set-ups, particularly in the smaller situations, they decided that the new Medical Department at ROME CABLE CORPORATION embodies these components in a striking degree. Here they found a physician with the time, the purpose and the opportunity to exercise, *in the friendly atmosphere of executive inspiration and whole-hearted management support,* the patience, interest, professional competence and imagination that are needed if the limitless possibilities of preventive medicine in industry are to be realized. The Medical Department in which this physician is established, and over which he presides, is the capstone of a distinguished record on the part of the corporation in the humanities of industrial operation.

The significance of this Citation is that it was awarded to the COMPANY *for and because of* its Medical Department, rather than to the Department itself. There were other companies deserving of special recognition, but only one Citation could be awarded. It is hoped the others will feel that the Citation is an official appreciation of the fine progress they, too, are making toward the happy combination of management interest and medical skill which is industrial medicine.

A Preventive Medical Service for Eleven Hundred Employees

Rome Cable Corporation

NEW from the ground up in physical appointments, and complete in scope of service, ROME CABLE CORPORATION'S Medical Department opened its doors officially in May, 1948. The department, and the program heralded in its inauguration, were the fulfillment of an ambition long cherished by the management. The company was always interested in good employee relations and, as its ability permitted from time to time, had voluntarily expressed this interest in many ways—through such things as group life and health and accident insurance, arrangements for hospital and medical care, an employee dividend plan, and a pension system. From the earliest days a First Aid room had been maintained, staffed by graduate nurses who referred the employees, when necessary, to the physician of their choice, or to a physician in the community retained by the company. But with the small turnover following from the enlightened personnel policies which were the company rule, and thus an increasing number "growing old" in the service, the executives began to think of a real health program—not so much from the standpoint of minimizing compensation costs or disability time and expense, although these are always important, as in the broader relations of prevention. And prevention was to mean more than the control of environmental conditions and the forestalling of the hazards of work; it would be also a personal matter as to each employee, furnishing him with a basic personal health inventory and keeping it current—in other words, restoring health where it wasn't, and maintaining it where it was. With the recent completion of the company's post-war expansion, the circumstances suggested that "now" was the time, and so, in early 1948, the plans for the health program became tangible, and DR. JAMES H. MCDONOUGH was engaged as full-time Medical Director to carry them out.

At the very beginning of his association with the company, DR. MCDONOUGH was given to understand that his department would be an integral and important arm of the organization—a positive and constructive force in the over-all functioning of the corporation. There was no feeling that its purpose would be sufficiently expressed in merely filling a need; no hint that its effect was to be expected in terms of an operating statement. Nor was it, as occasionally happens in the smaller situations, hooked on somewhere as a departmental appendage. This medical program was the product of executive interest; it would be an independent unit, reporting to top management. In the development of the plans, visits were made to a number of the leading medical departments, such as DR. SAWYER'S at Eastman Kodak, and conferences were held with the medical men in Rome. As the officers of the company became familiar with industrial medical practice elsewhere, every criterion of good industrial medicine which could be applied to ROME CABLE was whole-heartedly approved. The result is the present program.

The Medical Department

THE LAYOUT of the Medical Department is shown in the floor plan, and the equipment in the illustrations. The central location on the ground floor, and adjacent to Personnel—makes the Department easily accessible to all employees; over 90% of them can reach it without going out-of-doors. The building adjoins one of the main factory areas, but its construction and insulation are such that extraneous noises are shut out. As evident from the plan, the reception room is entered from the single and main entrance. Here is the receptionist-secretary, whose duty it is to make each employee feel at home and ascertain his immediate needs. If he is to have his over-all periodic examination the sec-

Dr. McDonough and His Staff

In the Reception Room

ROME CABLE CORPORATION
MEDICAL DEPARTMENT

HISTORY QUESTIONNAIRE

DATE

NAME ADDRESS SEX MARITAL STATUS OCCUPATION EMPLOYEE No DEPT

BORN MONTH DAY YEAR PLACE (Ph) NEXT OF KIN RELATIONSHIP

FAMILY PHYSICIAN CITY

NOTE—IN ANSWERING THE FOLLOWING, INDICATE NO BY A ZERO—0. IF THE DISEASE OR CONDITION HAS EVER OCCURRED OR EXISTED WRITE IN THE WORD YES

FAMILY HISTORY

HAS ANY MEMBER OF YOUR FAMILY (INCLUDING BLOOD RELATIVES) EVER HAD ANY OF THE FOLLOWING? IF YES, STATE WHO

ASTHMA EPILEPSY ULCER OF STOMACH OR INTESTINE
HAY FEVER STROKE (APOPLEXY) KIDNEY DISEASE
FOOD ALLERGY HEART DISEASE RHEUMATISM OR ARTHRITIS
DIABETES HIGH BLOOD PRESSURE RUPTURE (HERNIA)
CANCER TUBERCULOSIS BLOOD DISEASE
OTHER

PERSONAL PAST MEDICAL HISTORY

WHERE YES, WRITE IN MONTH AND YEAR WHEN POSSIBLE. IF THE CONDITION EXISTS AT PRESENT WRITE NOW

ASTHMA	SINUS TROUBLE	HEART DISEASE	HERNIA
HAY FEVER	COLDS, FREQUENT	INDIGESTION	NERVOUS BREAKDOWN
FOOD ALLERGY	SORE THROAT, FREQUENT	PEPTIC ULCER	SCARLET FEVER
EPILEPSY	TONSILITIS	CONSTIPATION	DIPHTHERIA
ANEMIA	COUGH, PROLONGED	KIDNEY DISEASE	TYPHOID
SKIN DISEASE	BLOOD SPITTING	RHEUMATISM OR ARTHRITIS	MEASLES
FAINTING SPELLS	PLEURISY	BACKACHE	WHOOPING COUGH
PUNCTURED EAR DRUM	PNEUMONIA	NEURITIS OR NEURALGIA	TUBERCULOSIS
			DIABETES

OPERATIONS (TONSILS, ABDOMINAL, ETC.) GIVE PLACE AND DATE

CONDITIONS REQUIRING MEDICAL ATTENTION PAST 2 YEARS

INJURIES, FRACTURES, AMPUTATIONS, ANY PRODUCING DISABILITY OR SCAR SMALLPOX VACCINATION SCAR? WHEN

COMPENSATION FOR INDUSTRIAL INJURY	NO	YES	WHEN	FOR WHAT	OCCUPATIONAL DISEASE	NO	YES	WHEN	WHAT KIND

ANY DISEASE OR INJURY NOT COVERED IN THE ABOVE

REMARKS OR EXPLANATIONS OF THE ABOVE

PRESENT PHYSICAL CONDITION

ANSWER EACH, USING 0 FOR NO, OR WRITE IN YES. USE DESCRIPTIVE TERM WHERE APPLICABLE

WEAKNESS	SLEEP	HOARSENESS	HEMORRHOIDS
CHILLS	FAINTING SPELLS	SHORTNESS OF BREATH	APPETITE
FEVER	NOSE BLEEDS	COUGH	USE OF LAXATIVES
NIGHT SWEATS	OBSTRUCTION OF NOSE	CHEST PAINS	URINATION: FREQUENT OR PAINFUL
HEADACHES	SORE OR BLEEDING GUMS	EXPECTURATION	SWELLING OF HANDS OR FEET
DIZZY SPELLS	ULCER IN MOUTH	HEARING	NUMBNESS ARMS OR LEGS

EYES: IS VISION NORMAL WITHOUT GLASSES? DO YOU WEAR GLASSES? IF YES: ALL THE TIME PART TIME

DATE OF LAST LENS PRESCRIPTION WEIGHT LBS. GAINED/LOST IN PAST 1-2 YRS. EXPLAIN

OTHER

OCCUPATIONAL HISTORY

NAME OF EMPLOYER	KIND OF WORK	NUMBER YEARS	FROM	TO	MATERIALS USED
ROME CABLE CORPORATION				TO DATE	

SOCIAL HISTORY

HOW MANY PEOPLE LIVE AT HOME WITH YOU? HOW MANY DEPENDENTS HAVE YOU? NUMBER CHILDREN?

EDUCATION: GRADE SCHOOL YRS. HIGH SCHOOL YRS. GRADUATED IS COLLEGE YRS. GRADUATED IS

TECHNICAL OR TRADE SCHOOLING

HOBBIES OUTSIDE WORK, AVERAGE No. HOURS PER DAY

USE OF TOBACCO, KIND AND AMOUNT

USE OF ALCOHOLIC BEVERAGES USE OF COFFEE AND/OR TEA CUPS PER DAY

USE OF DRUGS OR MEDICINES, KIND AND AMOUNT

I CERTIFY THAT MY ABOVE ANSWERS AND STATEMENTS ON THIS QUESTIONNAIRE ARE TRUE, CORRECTLY RECORDED, AND COMPLETE TO THE BEST OF MY KNOWLEDGE.

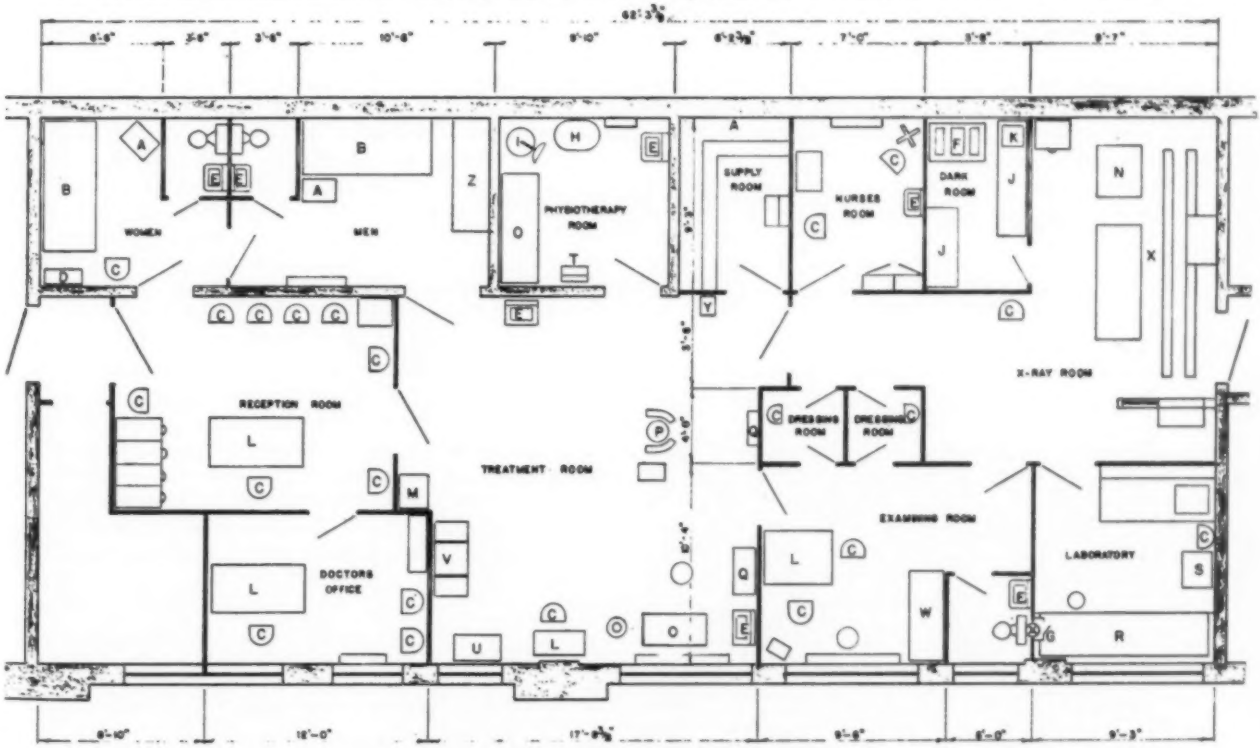
SIGNED WITNESS

Fig. 1.
The History Questionnaire is printed lengthwise of the two sides of an 8½ in. x 11 in. WHITE card. The lower half (above) is the reverse side of the card

In the Treatment Room

Facilities for Temporary Rest

retary gives him whatever help is required in filling out the medical history form. In this room are the filing cabinets; these are the responsibility of the secretary, are solely in her charge, and are kept locked except when she is present. Next to the reception room is the Medical Director's office. Off the reception room is the large treatment room, where facilities are provided for minor surgery, general medical treatments, eye, ear, nose and throat examinations, and redressings. Also adjoining are two rooms, for male and female employees, with beds for temporary rest, and individual lavatory facilities. The physiotherapy room, where patients may be kept under scrutiny of the nurse on duty, adjoins the main treatment room. Readily accessible also is the drug and supply room. And likewise leading from the treatment room is the examining room where the doctor makes the regular physical examinations and, as may be needed, more detailed examinations for employees seeking medical assistance. Two dressing cubicles adjoin both this office and the short hallway connecting the treatment room with the x-ray



THE MEDICAL DEPARTMENT LAYOUT

A—Supply Cabinet
B—Bed C—Chair
D—Linen Chest
E—Lavatory
F—Developing Tank
G—Pass Box
H—Whirlpool Bath
I—Infra-Red Lamp
J—Bench
K—Dryer L—Desk
M—Refrigerator
N—Photofluorographic Unit
O—Treatment Table
P—Treatment Chair
Q—Instrument Cabinet
R—Lab Desk
S—Electrocardiograph
T—Diathermy Machine
U—Autoclave
V—Operating Table
W—Examining Table
X—X-Ray Machine
Y—Scales
Z—Litter

ROME CABLE CORPORATION
MEDICAL DEPARTMENT

PHYSICAL EXAMINATION RECORD

DATE _____

NAME _____ AGE _____ EMPLOYEE No _____

GENERAL APPEARANCE AND CONDITION G F P	HEIGHT	WEIGHT	IDEAL WT.	TEMPERATURE	PULSE	RESTING	AFTER EX.	MEASUREMENTS	CHEST INSP.	EXP.	WAIST

SKELTON		LYMPH NODES		SKIN			
EYES	EOM	PUPILS	OPTHALMOSCOPIC	EARS	HEARING	RIGHT	LEFT

VISION	WITHOUT GLASSES OD 20/ OS 20/	WITH GLASSES OD 20/ OS 20/	NEAR VISION OD OS	VISUAL FIELDS OD OS	COLOR SENSE

NOSE	TEETH R 8 7 6 5 4 3 2 1 / 8 7 6 5 4 3 2 1 — 1 2 3 4 5 6 7 8 / 1 2 3 4 5 6 7 8 L	GOOD REPAIR CARIES SLIGHT	CARIES MARKED DENTURE	PYORRHEA NEED CLEANING	O MISSING X CARIOUS = FALSE	
MOUTH	PHARYNX	TONSILS	NECK	THYROID		

THORAX			
HEART		BLOOD PRESSURE	SYSTOLIC / DIASTOLIC
ABDOMEN			

HERNIAL SITES	EPIGASTRIC	UMBILICAL	FEMORAL	INGUINAL	HERNIA PRESENT YES / NO	TRUSS WORN	INCISIONAL	RINGS	(SMALL, MED., LARGE, FIRM, RELAXED) RIGHT / LEFT

PERINEUM		RECTAL									
EXTREMITIES											
NEUROLOGICAL							ROMBERG		TREMORS		

REFLEXES		BICEPS	TRICEPS	ABDOMINAL	CREMAST	PATELLAR	ACHILLES	CORNEAL	GAG	BABINSKI	ANKLE CLONUS
	RIGHT										
	LEFT										

SENSORY DISTURBANCES	

SUMMARY OF POSITIVE & SIGNIFICANT FINDINGS IN HISTORY & PHYSICAL EXAMINATION

CLASSIFICATION ☐

_____ MEDICAL DIRECTOR _____ M.D.

(OVER)

Fig. 2.
The Physical Examination Record is printed lengthwise of an 8½ in. x 11 in. WHITE card. The reverse side is ruled for "Additions to Medical History covering periods between Periodic Examinations"

ROME CABLE CORPORATION
MEDICAL DEPARTMENT

LABORATORY AND X-RAY RECORD

NAME _____ EMPLOYEE No _____

DATE	URINALYSIS						COMPLETE BLOOD COUNT										
	COLOR	PH	SP. G.	ALB.	SUGAR	MICROSCOPIC	RBC	Hb %	Hb Gm	WBC	DIFFERENTIAL POLY (N)	LYMPH	MONO.	EOSIN.	BASO.	OTHER

X-RAY—70mm CHEST	FILM No	RESULT	STS	RESULT

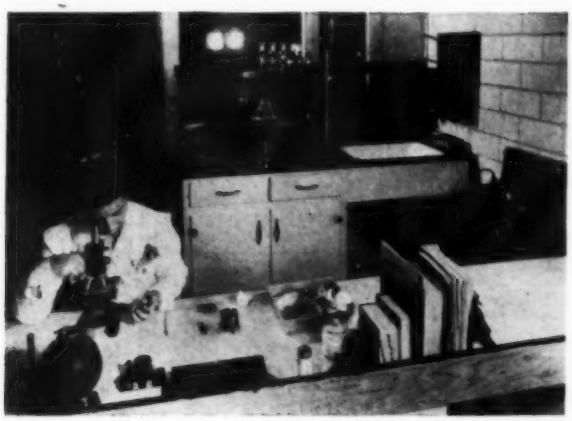
DATE	URINALYSIS						COMPLETE BLOOD COUNT										
	COLOR	PH	SP. G	ALB.	SUGAR	MICROSCOPIC	RBC	Hb %	Hb Gm	WBC	DIFFERENTIAL POLY (N)	LYMPH	MONO.	EOSIN.	BASO.	OTHER

X-RAY—70mm CHEST	FILM No	RESULT	STS	RESULT

DATE	URINALYSIS						COMPLETE BLOOD COUNT										
	COLOR	PH	SP. G	ALB.	SUGAR	MICROSCOPIC	RBC	Hb %	Hb Gm	WBC	DIFFERENTIAL POLY (N)	LYMPH	MONO.	EOSIN.	BASO.	OTHER

X-RAY—70mm CHEST	FILM No	RESULT	STS	RESULT

Fig. 3.
The Laboratory and X-Ray Record is lengthwise of a LIGHT-BLUE card, 8½ in. x 11 in. in size. The reverse side has spaces for "Miscellaneous Laboratory Reports"



The Laboratory

The X-Ray Room

area. The workings of this area and the clinical laboratory are carried out by a technician. Equipment is here provided for making routine blood and urine studies and taking electrocardiographic tracings. The x-ray equipment includes a table which is adjustable to 90°, a 200-milliampere rotating anode x-ray tube and floor stand. There is also a 70-millimeter photofluorographic unit. These are all controlled from a single automatic control panel.

The Preventive Program

AS A BASIS for the preventive phase of the Medical Program, each employee is being given a complete physical examination. Ahead of this, he fills out an all-inclusive history questionnaire which is designed to elicit the medical history of his family; his own personal medical record, including previous injuries; a resume of his current physical status; his occupational history; and a brief outline of what might be called his social or economic background (see Fig. 1, p. 180). This gives the Medical Director a rather complete picture of the employee as an individual. The next step follows when the Medical Director and the employee together go over this questionnaire and the answers in detail. Following this, the actual physical examination is undertaken. The separate form for this is shown as Fig. 2 (p. 182). As part of this examination, a complete blood study is done, including red, white, hemoglobin and differential counts; a urine analysis is made, with microscopic study; a 70-millimeter stereoscopic x-ray is taken of the chest; and all individuals over 40, together with those of younger years where the history is suggestive, are given electrocardiograph readings, which are sent to a consulting cardiologist for interpretation. At the start and again at the conclusion of this physical examination it is clearly explained to the employee that all information obtained from it is strictly confidential. He is then told of any positive findings, and their significance is carefully explained. Wherever it is thought necessary, the employee is advised to take the record of the findings with him to his family physician, or, if he so desires, a report is sent, with his definite permission, to the doctor of his choice. This same examination is given all new employees as a prerequisite to their actual employment.

Almost from the start this examination has been known as the "original" examination. In order that its purpose might be thoroughly understood, as well as the purposes of the Medical Program in general, a preliminary announcement was sent to all the employees, in the form of a personal letter from the President of the company carrying a full explanation, and stressing the fact that the Medical Director would in no way replace the family physician nor interrupt or change the relationship between the employee and his own doctor. Following this, numerous meetings were held with the supervisory group; these, in turn, explained the program again to their people, emphasizing that its aim was solely to maintain health; and then the executives and supervisors took their "original" examinations first. At this writing, only five individuals have expressed any reluctance to be examined, while more than 1050 have agreed willingly to the schedule. It is expected that all of the "original" examinations will have been completed within a year.

It is the plan of the Medical Director to carry out a full schedule of periodic examinations.

The Physiotherapy Room

ROME CABLE CORPORATION
MONTHLY REPORT OF MEDICAL DEPARTMENT

MONTH ..... 19....

INDUSTRIAL INJURIES
NUMBER INDIVIDUAL CASES.....
TOTAL NUMBER OF TREATMENTS.....
CASES TREATED BY PERSONAL PHYSICIAN OF OWN CHOICE.....

OCCUPATIONAL DISEASES OR ILLNESS
NUMBER INDIVIDUAL CASES.....

NON-INDUSTRIAL CASES
NUMBER INDIVIDUAL CASES.....
TOTAL NUMBER OF VISITS.....

CONSULTATIONS
TOTAL NUMBER.....

PHYSICAL EXAMINATIONS
PERIODIC, ORIGINAL.....
PRE-EMPLOYMENT.....
OTHER, SPECIAL.....

ROENTGENOLOGIC EXAMINATIONS
CHEST, PHOTOFLUROGRAPHIC.....
CHEST, LARGE FILM.....
INJURIES, INDUSTRIAL.....
OTHER X-RAYS.....

LOST TIME INDUSTRIAL CASES

NAME	EMPLOYEE No.	DEPT.	DATE OF ACCIDENT	DIAGNOSIS AND CAUSE OF ACCIDENT	DAYS LOST

REMARKS:

Fig. 4.
The Monthly Report is lengthwise of an 8½ in. x 11 in. WHITE sheet

MEDICAL DIRECTOR

Form MD-1.

ROME CABLE CORPORATION
MEDICAL DEPARTMENT
INDUSTRIAL INJURY OR DISEASE RECORD

NAME..... EMPLOYEE No..... DEPT.....

ADDRESS..... TELEPHONE No.....

AGE..... SEX..... OCCUPATION..... FOREMAN'S NAME.....

Date Reported	Time Reported	Date of Accident	Time of Accident

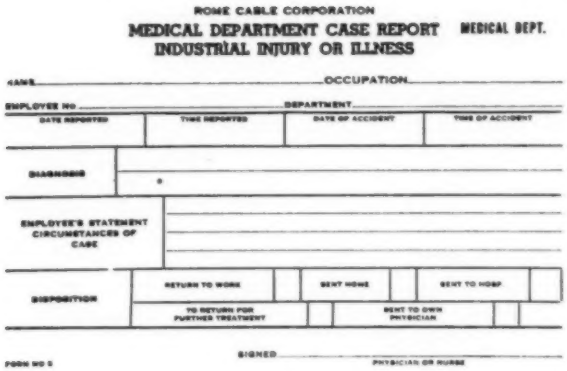
ESSENTIAL HISTORY (Employee's Statement) and PHYSICAL FINDINGS:

DIAGNOSIS AND EXTENT OF INJURY	

INITIAL TREATMENT:

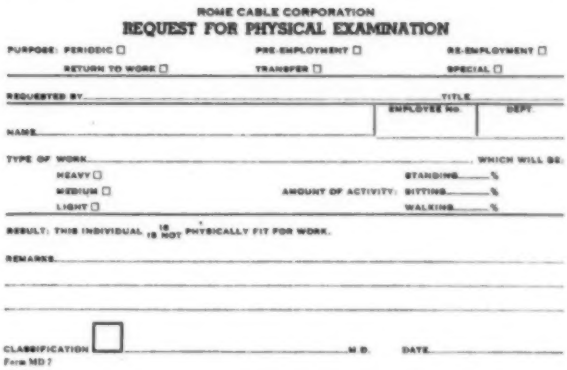
DISPOSITION: Return For Further Treatment, Provided Patient So Agrees..... ☐ Date ☐
Continue To Work..... ☐
Not Fit For Work..... ☐
Sent Home..... ☐
Sent To Hospital..... ☐
Patient Desires That Further Treatment Be Given By Authorized Physician Of His Own Choosing, Other Than Plant Physician..... ☐

Fig. 5.
The Industrial Injury or Disease Record is lengthwise of a RED card 7½ in. x 9½ in. The reverse is set up for a record of treatments: "Date, Description, Return Date, Treated by"


ROME CABLE CORPORATION
MEDICAL DEPARTMENT CASE REPORT MEDICAL DEPT.
INDUSTRIAL INJURY OR ILLNESS

NAME OCCUPATION
EMPLOYER NO DEPARTMENT
DATE REPORTED | TIME REPORTED | DATE OF ACCIDENT | TIME OF ACCIDENT
DIAGNOSIS
EMPLOYEE'S STATEMENT CIRCUMSTANCES OF CASE
DISPOSITION: RETURN TO WORK | SENT HOME | SENT TO HOSP | TO RETURN FOR FURTHER TREATMENT | SENT TO OWN PHYSICIAN
FORM NO 5
SIGNED PHYSICIAN OR NURSE

Fig. 6.
The Medical Department Case Report—Industrial Injury or Illness is in triplicate, one white, one yellow, one green, 4 in. x 6 in.


ROME CABLE CORPORATION
REQUEST FOR PHYSICAL EXAMINATION

PURPOSE: PERIODIC ☐ PRE-EMPLOYMENT ☐ RE-EMPLOYMENT ☐
RETURN TO WORK ☐ TRANSFER ☐ SPECIAL ☐
REQUESTED BY TITLE
NAME EMPLOYEE NO. DEPT.
TYPE OF WORK WHICH WILL BE:
HEAVY ☐ STANDING %
MEDIUM ☐ AMOUNT OF ACTIVITY: SITTING %
LIGHT ☐ WALKING %
RESULT: THIS INDIVIDUAL IS / IS NOT PHYSICALLY FIT FOR WORK.
REMARKS
CLASSIFICATION ☐ M.D. DATE
Form MD 7

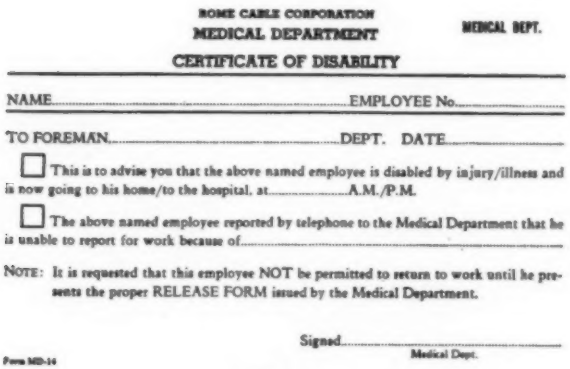
Fig. 7.
The Request for Physical Examination is a slip 4 in. x 6 in., printed on one side, and in duplicate, one yellow, one white

These will be done according to job requirements; at intervals of three months in some areas, six months in others, and yearly wherever that proves to be often enough. In any event it is proposed that each employee shall return at least once a year for a chest x-ray, and a review of his physical status at the time of his last examination in the light of his visits for illnesses and injuries during the interim as shown by the records. Where indicated by the over-all picture thus obtained, more detailed examinations will be made of specific body systems, and electrocardiographic tracings as well as laboratory tests will be done as required.

Day-by-Day Operation

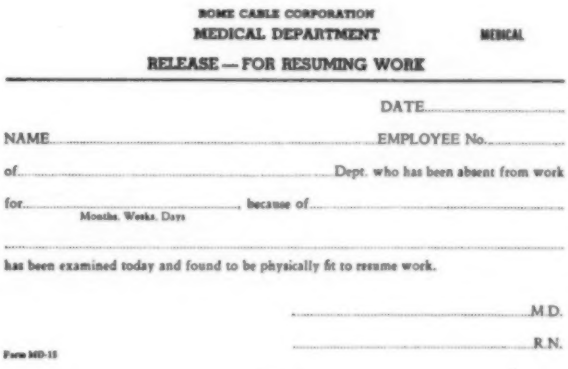
THE DAILY routine of the Medical Department includes first aid; emergency medical and surgical service; examinations—"original," preplacement, periodic, and special for hazardous jobs and food-handlers; back-to-work and check-out-from-work inspections; follow-ups on examination findings and injuries; and care of compensation cases under a Compensation Bureau license. Soon a health education program will be added. The Medical Department visits for one or another of these services now average about 50 a day. Complete 24-hour coverage is provided by four registered nurses, two on the day shift, one in the evening, and one on the night shift. They work under standing orders prepared by the Medical Director. A copy has been given to each nurse, with an explanation of its details, and a copy is posted in the Department. A technician and a receptionist-secretary complete the present staff.

Although it is continually brought to the employee's attention that the Medical Director in no way replaces or substitutes for his family doctor, he, the employee, nevertheless is encouraged to report to the Medical Department, at the earliest possible moment, *any deviation from the normal* in his physical status. This is in the interest of the opportunity for prevention. If he is ill from a non-industrial cause he is given temporary care. Should more be needed, as for an illness of substantial duration, he is advised to consult his personal physician. If he is injured while at work, he is under instruction to report it immediately. He has also been instructed, as provided by the Workmen's Compensation Law of the State of New York, that he is free to select any authorized physician to care for his injury. At the time of his first visit in connection


ROME CABLE CORPORATION
MEDICAL DEPARTMENT MEDICAL DEPT.
CERTIFICATE OF DISABILITY

NAME EMPLOYEE No.
TO FOREMAN DEPT. DATE
☐ This is to advise you that the above named employee is disabled by injury/illness and is now going to his home/to the hospital, at A.M./P.M.
☐ The above named employee reported by telephone to the Medical Department that he is unable to report for work because of
NOTE: It is requested that this employee NOT be permitted to return to work until he presents the proper RELEASE FORM issued by the Medical Department.
Signed Medical Dept.
Form MD-14

Fig. 8.
The Certificate of Disability is a slip 4 in. x 6 in. printed on one side and in sets of four, each a different color, one white


ROME CABLE CORPORATION
MEDICAL DEPARTMENT MEDICAL
RELEASE — FOR RESUMING WORK

DATE
NAME EMPLOYEE No.
of Dept. who has been absent from work
for Months. Weeks. Days, because of
has been examined today and found to be physically fit to resume work.
M.D.
R.N.
Form MD-15

Fig. 9.
The Release—for Resuming Work is a slip 4 in. x 6 in., printed on one side and in sets of four, each a different color, one white

with an injury a form (Fig. 6, p. 185) is completed showing the diagnosis, the employee's statement as to the cause of the accident, and the disposition made. The employee takes a copy of this to his foreman, a second copy goes to the Safety Engineer, and a third is retained in the Medical Department.

When anyone selects a physician qualified under the law to examine and treat compensation cases, he is given an "Authorization for Outside

DAILY TABULATION OF VISITS TO AND SERVICES RENDERED IN MEDICAL DEPARTMENT
ROME CABLE CORPORATION

VISITS TO MEDICAL DEPARTMENT

		ORIGINAL TREATMENT				TOTAL	FOLLOW-UP				TOTAL	TOTALS
INDUSTRIAL		INJURY (TRAUMATIC)										
		ILLNESS/DISEASE										
		LOST TIME INJURY										
		CONSULTATION										
		IND. ORIG. TREAT. TOTAL					FOLLOW-UP TOTAL					
NON-INDUSTRIAL		INJURY										
		ILLNESS/DISEASE										
		CONSULTATION										
		NON-IND. ORIG. TREAT. TOTAL					FOLLOW-UP TOTAL					

EXAMINATIONS	CLASSIF.	PRE-EMPLOY.	ORIG. PERIODIC	PERIODIC	RET. TO WORK	TRANSFER	SPECIAL	
	A							
	B							
	C							
	D							
	TOTALS							

TOTAL NUMBER OF VISITS TO MEDICAL DEPT.

BODY LOCATION	HEAD	FACE	EYE	NECK	SHLDR.	ARM	HAND	CHEST	ABDM.	BACK	HIP	LEG	FOOT	DERMATITIS	SYSTEMIC	TOTAL
INDUSTRIAL INJURY.																
ILLNESS/DISEASE																
TOTALS																

PHYSIO-THERAPY	INFRA-RED	DIATHERMY	HYDRO-THERAPY	LOCAL FEVER	TOTAL

X-RAYS (BONES)	EXTREMITIES	BACK	HEAD	SHLDR.	THORAX	PELVIS	TOTAL

CHEST X-RAYS	SIZE	PRE-EMPLOYMENT			PERIODIC			SPECIAL			TOTALS			TOTAL
		NORMAL	T B C	OTHER PATH'Y	NORMAL	T B C	OTHER PATH'Y	NORMAL	T B C	OTHER PATH'Y	NORMAL	T B C	OTHER PATH'Y	
	70 MM.													
	14 X 17													
	TOTAL NUMBER CHEST X-RAYS													

OTHER EXAMINATIONS		TOTALS
	BLOOD COUNTS	
	URINALYSES	
	STS (OUTSIDE LAB.)	
	ECG'S	
	SPECIAL LAB. TESTS	

ALL CASES SENT OUT-SIDE			TOTALS
	HOSPITALIZED	INDUSTRIAL CAUSE	
		NON-IND. CAUSE	
	TO HOME	INDUSTRIAL CAUSE	
		NON-IND. CAUSE	
	FOR TREATMENT — INDUSTRIAL		
	INDUSTRIAL — TO M.D., OWN CHOICE		

PERIOD COVERED DATE

SIGNED

Fig. 10.
The Daily Tabulation of Visits to and Services Rendered in Medical Department is width-wise on a WHITE sheet, 8½ in. x 11 in. in size. The reverse side is blank

ROME CABLE CORP. **Medical Department** Form MD19 7-48 2M
MINOR INDUSTRIAL INJURIES

NAME EMPLOYEE No. DEPT.

Date	History, Physical Findings, and Progress Notes	TREATMENT	Treated By

Fig. 11.
The form for Minor Industrial Injuries is on a RED card 5 in. x 8 in., with the rulings and columns continued on the reverse side

ROME CABLE CORP. **Medical Department**
NON-INDUSTRIAL ILLNESSES and INJURIES

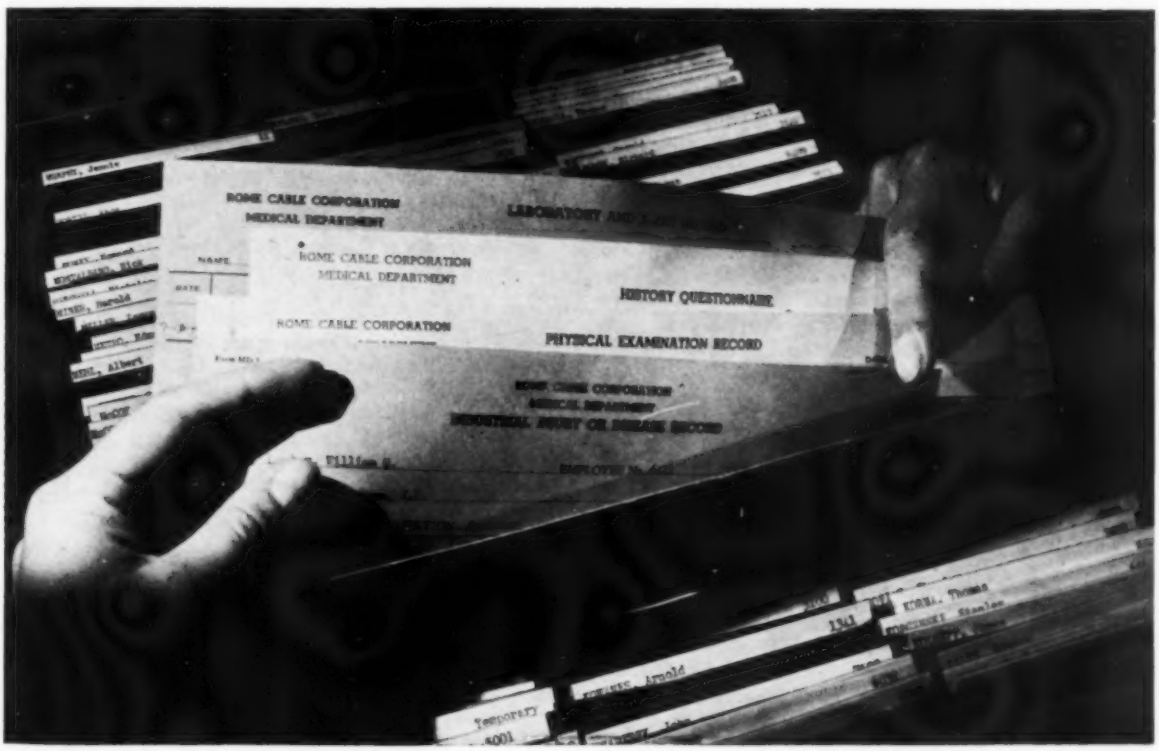
NAME EMPLOYEE No.

Date	CONDITION	TREATMENT	Treated By

Fig. 12.
The Medical Department—Non-Industrial Illnesses and Injuries is on a WHITE card 5 in. x 8 in. in size with the columns and rulings repeated on the reverse side

Medical Service." This is a letter-size sheet, is addressed to the doctor, gives the employee's name and address, follows with a history and summary of the case to date, and closes with the statement that a report of the doctor's findings and treatment "will be appreciated."

In the event of absence from work on account of illness or injury, the employee is expected to report personally or by telephone to the Medical Department. When he returns to work, he checks in at the Department for examination, where a record is made of the cause of his absence, and account is taken of any information from his personal physician. Where indicated, a detailed examination is made by the Medical Director. All of this information becomes a part of the employee's cumulative medical record. Where an absence has been of two or more days' duration a Return to Work form (Fig. 9, p. 185) is filled out, the employee taking a copy to his



The Employee Record Files

foreman, while, in the case of lost-time industrial injury, a copy goes also to the Safety Engineer.

Liaison with Safety

THE safety program at ROME CABLE is under the supervision of a full-time Safety Engineer. As has been noted, he is informed on the details of each industrial accident that occurs, and he and the Medical Director work together in investigating all cases of significant severity or portent. At specified intervals, the two make the rounds of the plants and their respective reports are included in the over-all report to the Works Manager. Also, it might be mentioned here that plans are now complete for the inauguration of a visual efficiency testing program, to be carried on in the Medical Department with the assistance of the Safety Engineer.

Industrial Hygiene

AS A PART of his routine trips with the Safety Engineer, the Medical Director makes it his duty to check various potentially hazardous conditions in the working areas. Where conditions are found which indicate possibilities likely to affect the health of the employees the problem is brought to the attention of the plant engineers and the correction worked out with them and the Safety Engineer.

Plant Sanitation

ROUTINE inspections are made of all lavatory and shower facilities. Their cleanliness and up-keep are considered to be a vital factor in the over-all health of the employees. A privately-operated cafeteria, under company surveillance, is open at stated hours and its facilities are available to the men on all shifts. While the employees of the cafeteria are not actual employees of the company a specific food handlers' examination is carried out at stated intervals on all cafeteria personnel. This includes a 70 mm. chest x-ray at intervals of six months.

Reaction of the Employees

AT THE TIME of this writing the Medical Program has been in operation at ROME CABLE approximately nine months. It can be said now that almost without exception the reaction of the individual employees has been most favorable. As was expected, certain doubts existed in the minds of some as to their standing with the corporation in the event of serious defects being noted in the physical examinations. It is believed, however, that careful education has overcome this, as in all instances where there were significant findings, employee cooperation was freely and gladly given. On the whole, the employee approval was immediate, and there are already numerous cases in which the laboratory, x-ray, and cardiographic findings have been taken to the family physician.

Dr. McDonough

ROME CABLE'S Medical Director, DR. JAMES H. MCDONOUGH, is a graduate of Washington and Jefferson College, and the University of Pennsylvania School of Medicine, where he received his M.D. in 1942. For a time, between schools, he was an instructor in the biological sciences for the Presbyterian Board of Foreign Missions at Alborz College, Teheran, Iran. His first medical work was with the U. S. Public Health Service in 1943. During the war he was assistant medical officer aboard the assault transport U.S.S. Bayfield, and took part in amphibious operations in Normandy, in Southern France, and at Iwo Jima and Okinawa. Later he was medical officer in charge of the U. S. Coast Guard Infirmary at Charleston, South Carolina. Leaving the service in 1946, he qualified for a Fellowship in Industrial Medicine and Surgery at the University of Pittsburgh Medical School. His appointment as Medical Director at ROME CABLE CORPORATION came in February, 1948. He is a member of the AMERICAN ASSOCIATION OF INDUSTRIAL PHYSICIANS AND SURGEONS. DR. MCDONOUGH is now engaged in a clinical study of the incidence of hypertension and obesity, the results to be published later. This is in addition to the health education program previously mentioned. As soon as practicable he will also undertake the general blood typing of the employees on a purely voluntary basis; and, because so many have an agricultural background, he will offer them immunization with tetanus toxoid, likewise on a voluntary basis.

[NOTE: Figs. 1, 2, 6 and 9 are identified in the text. The others: Fig. 3—"Laboratory and X-Ray Record" (page 182); Fig. 4—the "Monthly Report" (page 184); Fig. 5—the "Industrial Injury or Disease Record" (page 184); Fig. 7—the "Request for Physical Examination" (page 185); Fig. 8—the "Certificate of Disability" (page 185); Fig. 10—the "Daily Tabulation" (page 186); Fig. 11—"Minor Industrial Injuries" (page 187); and Fig. 12—"Non-Industrial Illnesses and Injuries" (page 187), are fully suggestive of their uses.]

Research In Industrial Health Problems

ROYD R. SAYERS, M.D.,
Chairman, Medical Advisory Board, Welfare and Retirement Fund, United Mine Workers, Washington, D. C.

THE saying, "Ignorance is not Bliss," is recognized by each of you almost as an axiom based on your own experiences—yet you know of many entering into activities blissfully ignorant of the health hazards to the workers and to the consumer. In the past and today much of the knowledge of the health hazards and their control has been learned by experience at a great cost in materials, money and health. As an example, fumes and dust through the ages have caused occupational illness. Lead and mercury probably are discussed more frequently in literature. The early control was determined by trial and error, but the hazard was avoided by the administrators through the use of slaves, prisoners of war or convicts. These methods are reported to be in use in some places even today. As the value of workers' health became more important, better control measures were put into effect. In the mercury mines of Spain, it is known that the workers had inflammation of the mouth, loss of teeth, palsy and characteristic psychosis. To a large extent, these hazards have been overcome by shortening the period of exposure—now stated to be 34 hours spread over eight days a month.

The progress of control of industrial diseases, as shown by the improvement in the health of workers during this century, has been rapid. As industry became more concentrated, the necessity for the control was obvious. The methods of determining control were still trial and error, field studies of environmental conditions and their effect on the workers, and laboratory studies of the effects of pre-determined conditions on both animals and men. These various approaches are illustrated by several events within our memory.

It is impossible to estimate the number of persons whose health has been impaired and whose lives have been shortened because of ignorance of the deleterious effects of the materials with which they worked.

ONE of the most unfortunate examples of the results of such ignorance was the tragic fate of the radium dial painters. During the years 1917 to 1924 a total of about 800 girls were employed in a factory in New Jersey painting the dials of watches and clocks with luminous paint. The paint used consisted of crystalline, phosphorescent zinc sulfide rendered luminous by the addition of small amounts of radium, mesothorium, and radiothorium. From 1922 to 1928, 13 deaths occurred. These cases were characterized by the presence of jaw necroses and the development of anemias. Dr. Martland, who made a study of the cases, had in 1925 listed 50 girls who had worked for a long time in dial painting and among whom he believed most of the cases would develop. In the late fatal cases only radium was detected at postmortem.

The many lessons learned from the fate of the radium dial painters and from experience of damaged hands, amputations, and the development of multiple sarcomas following the discovery and use of the roentgen ray led to a new concept of occupational health in connection with protecting the workers against the introduction of nuclear energy into industry. It was realized that the errors committed and the damage produced in past years through unwise exposure to radiation could not be repeated or multiplied in a project the size of the Manhattan District Project. It was necessary to develop special services new to industry to control the hazards. The specific philosophy adopted for that project must be indoctrinated into the industries that will be employing nuclear energy in their operations in the future.

This philosophy, as stated by the Director of the Oak Ridge National Laboratory, demands strict control to maintain a lower exposure incidence to prevent all conditions associated with delayed damage effects as well as acute radiation injury. The special protective measures provided for the Manhattan Project were fully justified by the results. Thousands of employees on the atomic energy projects worked with radioactive materials equivalent to millions of times the amount of curies of radium in all the hospitals and laboratories in the world. In spite of all this hazardous radiation, no one associated with these projects has been injured by radiation so far as can be determined by the health physicists, millions of instrument measurements, and the medical departments from very thorough and frequent medical examinations.

ANOTHER interesting incident arose in connection with lead tetraethyl, now used so generally in gasoline by motorists. The problem of a marketable "anti-knock" material for use in gasoline which was being investigated by the General Motors Corporation was solved by the discovery that lead tetraethyl, a liquid soluble in gasoline, effectively suppressed detonation or knock, when present in gasoline to the extent of one part in 1270 of gasoline—which is less than 0.08%. Early in 1923 the use of this substance in gasoline was begun. Lead was plentiful enough to be adequate for treating all the gasoline used and if it proved satisfactory in other respects it would be possible to redesign automotive engines for higher compression ratios to give at least 50% greater efficiency and lead

Presented at a Joint Conference of New York Doctors and Businessmen on Health Problems in Industry at the Commerce and Industry Association of New York, Inc., December 1, 1948.

ultimately to covering twice the mileage per gallon of gasoline. However, the possible danger from such wide distribution of a lead compound aroused fear on the part of those concerned with public health. This fear was intensified when fatal poisoning occurred in the manufacture and mixing of the concentrated tetraethyl lead itself. As a consequence of such apprehension, the distribution of tetraethyl lead was stopped on May 5, 1925, and the sale of gasoline containing the substance was thereby generally discontinued.

The General Motors Research Corporation, which conducted the research on anti-knock materials, recognized this possible hazard and asked the U. S. Bureau of Mines to make an impartial experimental investigation of the possibility of poisoning from the lead in automobile exhaust gases from gasoline containing lead tetraethyl, and to make the results public regardless of what they might be. Other studies were conducted by Columbia University and the Ethyl Gasoline Corporation. The studies by the Bureau of Mines and Columbia University were experimental investigations on animals; the series at the Bureau of Mines showed no effect from the exhaust gases from an engine using gasoline containing tetraethyl lead in commercial proportions when the carbon monoxide was kept below 0.02%, but prolonged exposure to unburned vapor containing 0.3% of ethyl gasoline caused lead storage. The Columbia University studies indicated storage of lead from skin application of 1:1,000 tetraethyl lead in gasoline, also from the inhalation of the fumes from such a dilution; but it was agreed by both sets of workers that no definite idea of the reality of the hazard could be obtained without human experience under practical working conditions. The studies by the Ethyl Corporation included human observations, but were not sufficient for conclusions to be drawn therefrom.

Reports of these studies were made at a conference called by the Surgeon General of the Public Health Service on May 20, 1925. After considerable discussion of the various phases of the problem, a resolution was passed asking the Surgeon General to appoint a committee of seven to determine the health hazards involved in the retail distribution and general use of tetraethyl lead gasoline motor fluid. This committee reported at a public conference on January 19, 1926. In accordance with the recommendations of the committee, suggested regulations were drawn up by the Public Health Service covering the manufacture, distribution, and use of tetraethyl lead and mixtures containing tetraethyl lead for adoption and enforcement by the several states.

Since the adoption of the regulations suggested, cases of poisoning by tetraethyl that have occurred have been due to misuse or failure to take the precautions recommended.

Poisoning in connection with its distribution and use by the public as a motor fuel has not been observed.

ALTHOUGH there have been and still are many enterprises initiated without considerations of possible health hazards, there are numerous instances of thorough research before rather than after untoward happenings have been experienced. A far-sighted approach to a possible hazardous enterprise was that which preceded the construction of the vehicular tunnels under the Hudson River between New York and New Jersey.

In 1921 the Bureau of Mines was asked to study the question of the amount and composition of exhaust gases from automobiles in cooperation with the New York and New Jersey State Bridge and Tunnel Commissions. To answer the question, road tests were made on automobiles and trucks at the Pittsburgh Experiment Station. These machines were taken from service without any previous adjustments so that the composition and amount of exhaust gas might be considered as representative of actual operating conditions prevailing in the tunnels. The results of the road tests showed that the percentage of carbon monoxide for the various individual cars ranged from 0.5 to 14%, with an average of 7% carbon monoxide. The fact that during the day (November 13, 1927) on which the Holland Tunnel was opened for public traffic a total of 51,750 cars passed through indicates the possibilities for carbon monoxide poisoning if great care had not been taken to provide proper ventilation to remove the exhaust gases from the tunnel.

On opening the tunnels to automotive traffic, elaborate and systematic chemical and engineering tests, instituted to automatically record whether or not the tunnels were safe routinely 24 hours a day in every section of the tunnels on every day of the year, showed that safe working conditions were being maintained. In 1941 the Port of New York Authority requested the U.S. Public Health Service and the U.S. Bureau of Mines to study the state of health of the traffic officers who had been assigned to duty in the Holland Tunnel, when it was opened to traffic in November, 1927. During the intervening 13 years most of these officers had been on duty in the tunnels every working day. The results of medical examination of all these men with long service records demonstrate that the system of engineering and medical control set up for their protection was effective.

SOME years ago when dichlorodifluoromethane, popularly called Freon 12, was proposed as a non-toxic, non-explosive refrigerant for use in domestic and commercial refrigerating appliances and in air-conditioning equipment for public buildings, homes, and industries, the Frigidaire Corporation asked the cooperation of the Bureau of Mines in making a laboratory study of the toxicity and potential hazard of the substance. The results of the study as reported showed that the possibility of public health and accident hazards resulting from exposure to dichlorodiflu-

oromethane when used as a refrigerant was remote. The Bureau's interest in refrigerants was due to their possible use in cooling deep, hot mines. The non-toxic, non-explosive properties of Freon 12 made it an ideal refrigerant for military requirements for preserving food and medicine (including whole blood for treatment of the wounded) for our far flung battle lines during World War II.

Another important military use of dichlorodifluoromethane was as a base in the very effective insecticide, DDT, which protected the soldiers from many diseases prevalent in most of the countries in which sanitation was almost if not entirely non-existent. By using a non-toxic substance like dichlorodifluoromethane for a base it was possible to apply the DDT powder to the clothes and skin of the men and thus protect them from insects that transmit cholera and other dangerous insect-borne diseases.

The requisition during World War II of Freon 12 for military requirements greatly increased the use of methyl chloride as a refrigerant. Those interested in public health were considerably concerned at the possibility of poisoning. From studies on the toxicity of methyl chloride, which were made some years ago after several deaths had occurred from the leakage of methyl chloride, it was found much less toxic than the other refrigerants—sulfur dioxide and ammonia—then in general use, but the fact that the latter had excellent warning properties made them less hazardous in actual use than methyl chloride. Therefore, the addition of some agent that would warn of the presence of such non-odorous refrigerants was recommended.

The instances given, and many others that could be cited, indicate the value of and necessity for continued research to prevent the repetition of the happenings of the past.

HOWEVER, there is much pioneering and missionary work to be done to show the value in dollars and cents of a complete medical program, and to show young medical men the opportunity in the field of all types of occupational medicine. The field is enormous, including railroads, mines, public utilities, textile industries, chemical industries, iron and steel plants, plants using heavy metals, plants producing all types of dust, plants producing noxious vapors and fumes, plants using various types of toxic and non-toxic agents, plants requiring repetitive operations, submarine workers, divers, and caisson workers.

Into the investigations cited went three types of research—library, laboratory and field studies. It is one of the duties of industrial medicine to conduct such studies but more especially to make practical application of the results in industry. Today scientific literature has attained such tremendous proportions and the volume is increasing at such a rate that the present-day research workers spend more of their time in the library and correspondingly less time in the laboratory. Both methods of research together with their practical application are necessary in the practice of industrial medicine and hygiene.

Although industrial medicine has made great progress since the first World War, the possibilities for further development are enormous. Advances have been made but the vast increase in productivity achieved with machines has not been matched by an increase in the efficient use of human beings. One of the main handicaps is the lack of competent personnel—physicians, engineers, chemists, and nurses. Another handicap is the lack of knowledge that prevails regarding the physical, mental, and emotional reactions of the individual workers to the operations of these machines.

Very close collaboration between the industrial physicians, engineers, and technical personnel of an enterprise is indispensible to guide successfully the fight against occupational morbidity. In many instances industrial medical services have not attained organic incorporation with the plant. In an interesting article on the "Collaboration of the Engineer and the Industrial Physician," Daric, a French engineer, called attention to the fact that too many industrial physicians do not know well the responsibilities of the engineer, the functioning of business, and the necessity they are under to value, in the exercise of their profession, all the complexity of the multiple machinery that characterizes modern industrial enterprises.

The engineers as a whole, are little open to problems posed by the presence of men who, under their direction, execute the works they have conceived and organized. The school that trained them has almost always neglected to prepare them for their human responsibilities. Their condition of mind carries them more toward the solution of purely technical problems than toward these human problems, so diverse and so changeable, where the spirit of finesse must intervene at least as much as the spirit of geometry. Moreover, many engineers are harassed by the immediate necessities of production and the difficulties inherent in the actual circumstances. Finally, certain efforts of comprehension of these problems have not always been encouraged as they should have been.

Experience has shown that each time the physician and the engineer have made an effort at mutual comprehension, each time that they have understood what they could expect and receive from each other, the resulting collaboration has been extremely fruitful. The engineer and the physician are concerned jointly in production. Together they should cooperate to obtain permanently as high efficiency as possible, with the cost of fatigue and wear and tear of the personnel reduced to the minimum.

An Experiment with Triethylene Glycol Vapor for the Control of Colds among Office Employees

W. J. McCONNELL, B.S., M.D.,
Assistant Medical Director,
Metropolitan Life Insurance Company,
New York

FOLLOWING the reports of Dr. O. H. Robertson and associates on the germicidal properties of glycols when dispersed into the air as aerosols and vapors, the Commission on Air-borne Infections, under the direction of Robertson, became concerned with further observations on the disinfecting properties of glycols, particularly of triethylene glycol vapor; and also with observations on the use of triethylene glycol vapors as a means of controlling respiratory tract infections among military personnel.

An independent study on glycol disinfection was sponsored by a conference group on atmospheric control of the Committee on Sanitary Engineering, working in close contact with the Commission on Air-Borne Infections of the Army Epidemiological Board and with similar organizations of the Navy and the U. S. Public Health Service. Representatives of this conference group asked the Medical Department of the Metropolitan Life Insurance Company to give consideration to a study of the efficiency of triethylene glycol vapors as a means of reducing colds among office employees working in an air-conditioned building.

In the fall of 1946, an experiment was begun with the use of triethylene glycol in the Metropolitan Home Office, New York. The test room was in Unit One Building (areas 7U, V, W, and X) housing about 500 employees. The control room consisted of a similar untreated area designated as areas 10 and 11Y and Z.

Both the test and control rooms were already supplied with the necessary duct systems for the proper distribution of air. A contracting firm was engaged to install and service all vaporizing equipment and to maintain during the daily operating periods such concentrations of triethylene glycol vapor as have been claimed to be effective for air disinfection. This was accomplished by the installation of a glycol vaporizer in each of the two fan units supplying air to the test room —a space of approximately 200 feet long, 138 feet wide, and 14 feet in height. The glycol vapor was introduced into the air stream between the heating coils and the suction fans. Engineers of the contracting firm periodically determined the concentrations of glycol vapors in the air in eight areas in the test space and made bacterial counts in eight areas in the test space and in eight areas in the control space.

Vapor determinations were made periodically also by Mr. O. S. Cullimore, Chemist, Metropolitan Industrial Hygiene Laboratory, and bacterial counts were made by Dr. W. C. Noble, Bacteriologist, Metropolitan Biochemical Laboratory.

Glycol Concentrations

AT FIRST difficulty was experienced in procuring uniform distribution of the glycol and maintaining sufficient concentrations of glycol vapor in the air of the test areas. However, after a brief period, and following a conference with the contractor's engineer, the output of the two vaporizers was increased by raising the outlet temperature to approximately 200° F and later to 205° F. This resulted in an average glycol concentration in the test areas of from 82.5% to 91% and caused a slight fog at points where the room temperature fell below 73° F. To correct this condition the amount of glycol vapor being introduced into the room was reduced by lowering the outlet temperature on the vaporizers to an average of 194° F. This gave approximately .0025 milligram per liter of air and is as heavy a concentration as seems practicable in an office application. Although some slight variations were found at times this concentration was fairly well maintained throughout the test areas.

First Period, October 1946 to November 1947

METHOD OF COLLECTING BACTERIAL SAMPLES: From October 16, 1946, to June 25, 1947, of this period, Dr. Noble determined the bacterial content of room air simultaneously in the test and control areas by open plate counts. Additional methods were employed during the second year.

FREQUENCY OF TESTS: Tests were made at weekly intervals whenever practicable, but twice the period between tests was five weeks, and once it was six.

TIME OF MAKING TESTS: Tests were made as early as 10 A.M., as late as 4:30 P.M., and at different times between these hours, including both morning and afternoon rest periods, so that the effect on bacterial counts of variations in personnel activity within the rooms, and of air-borne dust and air currents might be observed. The activity, however, remained fairly constant throughout the day and no changes were noted in numbers of air-borne bacteria which could be attributed to it.

METHODS: The bacteriological determinations were primarily quantitative and only secondarily qualitative. In a general way only was note made of variety and species, but in special instances search was made for hemolytic streptococci and other potential pathogens of the respiratory tract.

The samples were taken in the corners, near the walls, and in the centers of the rooms at the height of desk or file tops.

(a) Open Petri dishes of blood agar (Difco blood agar base with the addition of 5% sterile whole blood) were exposed and bacteria were collected by gravitation or by movement of air currents across the plates or by the combined action of the two. Exposure was for 20 minutes during the first year of the investigation. This was increased to 30 minutes the second year. Colony counts were made after 48 hours' incubation at 37° C.

(b) Gentian violet (1-500,000 and 1-1,000,000)-blood agar in open Petri dishes was used as a selective medium for detecting hemolytic streptococci. Exposure times were from 20 minutes to three hours.

The open plate method described above shows preponderantly those bacteria associated with the larger and heavier dust particles or aggregations ("dust" nuclei, which settle out of the air more rapidly than the smaller and lighter "droplet" nuclei). These bacteria are principally nonpathogenic air forms such as sarcinae and staphylococci which Robertson claims to be less susceptible to the action of glycol vapors than the streptococci and pneumococci of the droplet nuclei.

ABSENTEE RECORDS: During the initial period of the experiment absence for illness, duration five days or less, was computed by Mrs. M. G. Stephens, Medical Record Section, from the detailed figures kept by the Personnel Division for 32 weeks from November 4, 1946, to June 13, 1947. Data are presented for females only because the number of men in the control group was small. It was found in the test, or glycol-exposed, group that 447 females had 948 absences, an average of 2.12 per female. They lost 1644 days (2.42%) out of a possible 67,033 working days minus vacation days. In the control or nonexposed group 592 females had 1624 absences, an average of 2.74 per female. They lost 2608 days (2.93%) out of a possible 89,029 working days.

The apparently lower absence rate in the glycol-exposed group may not logically be attributed to the treatment of the conditioned air, because the two groups were relatively dissimilar prior to the experiment. In the 12-week period from October 8, 1945, to December 28, 1945, the group which became the glycol-exposed group had .69 absences per female compared with .84 in the control group and 2.59% of working days lost compared with 2.90% in the control group.

Second Period, December 1947 to August 1948

FOLLOWING a conference of interested professional staff members on September 24, 1947, it was decided to continue the experiment another year using the same test areas (7U, V, W, and X) for at least part of the period, but selecting for control purposes, areas which approached more closely those in the test areas. Areas 8U, V, W, and X were selected as the control areas.

COLLECTION OF DATA ON INCIDENCE OF COLDS: It was further decided to obtain weekly records from each employee of all colds and other respiratory illnesses among the two groups, irrespective of whether absence was incurred or not. Special forms were developed for this purpose. The department supervisors of the two areas, the test and control, were asked to appoint leaders who would be responsible for collecting the completed forms weekly. The leaders were given specific instructions as to the character of the experiment and their cooperation enlisted.

Neither the leaders nor the employee groups knew which had been selected for the treatment and which for control.

The experiment was conducted in three stages, as follows:

Stage I.	8 weeks (December 26, 1947—February 13, 1948). Seventh floor group, areas U, V, W, and X received gylcol. Eighth floor group, areas U, V, W, and X did not receive glycol.
Stage II.	15 weeks (February 26, 1948—May 28, 1948). Eighth floor group, areas U, V, W, and X received glycol. Seventh floor group, areas U, V, W, and X did not receive glycol.
Stage III.	12 weeks (May 28, 1948—August 20, 1948). Neither group received glycol.

METHODS OF COLLECTING BACTERIA: In addition to the plate methods already described for determining the bacterial content of room air, Dr. Noble employed the following methods:

1. *Collection by the Wells' Air Centrifuge:* Samples each of 10 or 20 cubic feet of air were passed through a Wells' air centrifuge either into 20 or 25 cc. of melted agar or of broth which was subsequently plated in agar and blood agar. Colony counts were made after incubation at 37° C for 48 hours and were expressed as the number of colonies from one cubic foot of air for each sample. The rate of air flow through the machine was one cubic foot a minute.

The colony counts obtained by this method were not comparable with those of the open plate method. Theoretically as compared with the open plate, this method offers the advantages of sampling definite volumes of air and of collecting droplets as well as dust nuclei, but Phelps has shown that its efficiency may be as low as 30% and is never over 60%.

2. *Collection by Bubbling Air Through an Absorbing Medium:* Measured volumes of air were aspirated through a liquid medium by means of Folin tubes or impingers and an air pump. Samples of 10 and 20 cubic feet were passed through 20 cc. of broth at the rate of one cubic foot a minute. The broth was then plated in agar and blood agar, and colony counts were made after the usual incubation period of 48 hours at 37° C. Results were expressed as numbers of colonies in one cubic foot of each sample of air.

TABLE I.
OPEN PLATE COUNTS—20 MINUTES EXPOSURE

Date 1946-1947	Test Area 7 U, V, W, X		Control Area 10-11 Y, Z	
	No. plates	Average count	No. plates	Average count
Oct. 16	8	26	2	22
21	12	35	4	32
23	14	33	4	34
29	13	35	12	33
Nov. 4	14	38	14	43
12	12	33	12	29
19	13	33	12	37
25	13	31	12	22
Dec. 2	12	32	12	25
17	12	25	12	24
26	12	32	12	24
31	12	27	12	28
Jan. 7	12	32	12	23
14	12	19	12	22
22	12	20	12	23
29	12	21	12	22
Feb. 4	12	19	12	10
11	12	25	12	26
17	12	21	12	22
24	12	19	12	17
Mar. 3	11	20	11	20
11	12	21	12	17
17	12	24	12	20
25	12	31	12	28
Apr. 30	4	24	0	0
May 13	8	29	4	17
20	3	39	3	14
June 25	12	24	12	27
TOTALS	317	27.2	282	24.7

TABLE II.
OPEN PLATE COUNTS—30 MINUTES EXPOSURE

Date 1947-1948	Test Area 7 U, V, W, X		Control Area 10-11 Y, Z	
	No. plates	Average count	No. plates	Average count
Dec. 12	14	27	14	35
Jan. 14	14	42	14	27
28	14	36	14	28
Feb. 3	14	44	14	30
11	14	32	14	31
17	14	37	14	26
TOTALS	84	36.2	84	29.5

TABLE III.
OPEN PLATE COUNTS—30 MINUTES EXPOSURE

Date 1948	Test Area 8 U, V, W, X		Control Area 7 U, V, W, X	
	No. Plates	Average Count	No. Plates	Average Count
Feb. 25	13	28	14	45
Mar. 2	14	28	14	39
9	14	25	14	32
Apr. 20	14	24	14	37
27	14	24	14	33
May 6	8	30	8	26
12	8	23	8	34
June 3	8	31	8	27
TOTALS	93	26.5	94	35.0

TABLE IV.
OPEN PLATE COUNTS
FEBRUARY 1948 TO JUNE 1948

	Test Area 8 U, V, W, X	Control Area 7 U, V, W, X
No. tests	8	8
No. plates	93	94
Total count	2464	3293
Average count	26.5	35.0

Glycol vapor is absorbed by the collecting broth during this procedure, so that a solution of glycol is obtained that may be 5,000 times as concentrated as it was in vapor form in the air. The possible significance of this is discussed below.

Quantitative Results of Bacterial Counts

OPEN PLATE COUNTS: Table I shows the results for the first year. To interpret these results the average plate count of the test area for each date was compared with the average plate count of the control area for the same date (the same test). No consistent or significant differences can be observed, the average plate count for the entire period being somewhat higher in the test area than in the control zone (27.2 to 24.7).

In February 1948, the test and control areas were interchanged. There resulted no corresponding change in the total and average counts, each area maintaining its previous level, as is apparent from Tables II and III.

Table IV summarizes the results in Tables I, II, and III and covers the period from October 1946 to June 1948, when the vapor was stopped. Forty-two tests were made during this time and 954 plates were exposed, giving average counts of 28.6 for the test areas and 27.7 for the control areas.

Table V shows counts in the test and control areas after vapor had been discontinued. When compared with the corresponding counts in Tables I, II, and III, no significant changes are to be seen.

2. WELLS' AIR CENTRIFUGE COUNTS: Between April 20 and June 3, 1948, 10 tests were run in the test and control areas. One hundred and eighty cubic feet of air were examined in the test area (8U, V, W, and X) and the average colony count was 42.6 for each cubic foot of air. In the control area 170 cubic feet of air were examined and the count was 44.8 for each cubic foot (Table VI).

Between June 12 and August 25 no vapor was added in the test areas. The average count for this period was 62 per cubic foot as compared with 62.1 per cubic foot in the control areas (Table VII).

3. BUBBLING APPARATUS RESULTS: A few tests were run with this apparatus. The results were completely at variance with those obtained by the open plate method and the Wells' air centrifuge. The first tests were made using sterile distilled water as the collecting medium so that determination of the absorbed vapor might be made directly from it. The colony count was 4.4 for one cubic foot in the test areas and 13.3 for one cubic foot in the control area (with corresponding open plate counts of 29 and 15.5). When broth was used instead of water, counts were obtained of 65.3 and 308.6 a cubic foot for test and control areas, respectively (with open plate counts of 38 and 17). It was evident that distilled water was not a favorable collecting medium for bacteria.

TABLE V.
OPEN PLATE COUNTS
DECEMBER 1947 TO JUNE 1948

	Test Area	Control Area
No. tests	14	14
No. plates	177	178
Total count	5478	5772
Average count	30.9	32.4

Both water and broth absorbed between 90% and 100% of the glycol from the air sampled. The possibility was thus indicated that bacteria in the air samples from the test areas were being killed in the collecting broth. That the glycol absorbed from the air was not sufficiently concentrated to do this of itself was shown by adding to the sample tubes of broth used above mixed suspensions of air bacteria and plating after 30 minutes; no reduction in the plate count resulted. Samples were taken in the control areas with the Wells' air centrifuge, using dilutions of 1% and one-tenth of 1% glycol in broth for the collecting medium, as the concentration of glycol absorbed during sampling lay between these values. The counts averaged 52 a cubic foot, as compared with 100 a cubic foot with plain broth in the control test. These results agreed with those obtained by the bubbling apparatus and gave further evidence that bacteria were killed in the collecting broth during air sampling in the test areas.

TABLE VI.
WELLS' AIR CENTRIFUGE

	Test Area 8 U, V, W, X			Control Area 7 U, V, W, X		
Date 1948	Volume sampled (cu. ft.)	Total count	Average count for 1 cu. ft.	Volume sampled (cu. ft.)	Total count	Average count for 1 cu. ft.
Apr. 20	50	1550	31	50	1700	34
27	30	600	20	30	1320	44
May 7	40	2720	68	40	2800	70
12	40	1880	47	30	1010	37
June 3	20	1920	96	20	780	39
TOTALS	180	7670	42.6	170	7610	44.8

TABLE VII.
WELLS' AIR CENTRIFUGE

	Area 8 U, V, W, X No Triethylene Glycol Vapor			Area 7 U, V, W, X No Triethylene Glycol Vapor		
Date 1948	Volume sampled (cu. ft.)	Total count	Average count for 1 cu. ft.	Volume sampled (cu. ft.)	Total count	Average count for 1 cu. ft.
June 14	40	2752	69	40	2474	62
Aug. 17	50	3056	61	40	2492	62
25	20	1013	51	20	1241	62
TOTALS	110	6821	62.0	100	6207	62.1

Qualitative Results of Bacterial Tests

THE varieties and species of bacteria, whether obtained from the test or control areas, or by different methods of sampling, were essentially the same. Hemolytic streptococci, the most spec-

TABLE VIII.
INCIDENCE OF "NEW COLDS" BY SECTIONS

	Seventh Floor GLYCOL						Eighth Floor NO GLYCOL					
Week Ending	A1-HO*	A2	B-K	C	H	Total	D	E&J2	G	I	J-1	Total
Dec. 26, 1947	23	19	14	11	11	78	19	9	16	5	22	71
Jan. 2, 1948	19	18	14	27	11	89	18	25	14	9	14	80
9	16	13	9	16	13	67	23	13	13	13	7	69
16	11	9	11	24	6	61	16	16	12	12	8	64
23	9	10	46	15	8	88	15	17	8	4	8	52
30	14	11	18	14	20	77	15	10	6	10	6	47
Feb. 6, 1948	15	11	21	10	16	73	22	18	10	15	25	90
13	14	10	25	14	8	71	21	18	15	7	21	82
8 weeks total	121	101	158	131	93	604	149	126	94	75	111	555
	NO GLYCOL						GLYCOL					
Feb. 20, 1948	15	10	24	10	9	68	11	14	15	15	18	73
27	11	20	23	14	14	82	21	9	7	6	14	57
Mar. 5, 1948	9	15	20	13	9	66	17	10	6	6	13	52
12	12	11	15	19	10	67	15	11	7	11	13	57
19	11	18	13	17	15	74	12	8	7	7	15	49
26	11	15	11	10	9	56	7	9	6	6	10	38
Apr. 2, 1948	13	10	13	6	8	50	6	6	7	5	10	34
9	11	8	20	7	7	53	6	5	4	9	6	30
16	4	10	9	10	7	40	9	8	5	4	4	30
23	8	12	16	6	9	51	12	4	2	7	7	32
30	5	10	12	7	5	39	10	8	3	8	9	38
May 7, 1948	7	6	19	3	2	37	12	10	8	4	12	46
14	7	9	18	5	4	43	20	2	7	7	3	39
21	7	7	13	10	8	45	12	4	3	5	8	32
28	3	7	9	4	4	27	11	3	1	10	14	39
15 weeks total	134	168	235	141	120	798	181	111	88	110	156	646
			NO GLY						NO GLYCOL			
June 4, 1948	8	7	9		5	37	11	6	4	5	8	34
11	8	5	12	9	4	38	8	6	2	6	8	30
18	5	4	9	8	6	32	11	10	1	3	11	36
25	6	5	9	4	4	28	4	2	2	5	9	22
July 2, 1948	6	7	7	4	6	30	5	5	0	4	1	15
9	7	3	7	6	2	25	6	4	4	2	2	18
16	4	4	6	6	3	23	3	2	1	1	5	12
23	5	3	7	6	2	23	9	2	2	6	5	24
30	5	4	4	10	1	24	7	2	1	3	0	13
Aug. 6, 1948	5	5	3	6	3	22	9	1	2	1	4	17
13	4	4	6	5	4	23	6	2	4	2	7	21
20	3	6	6	7	10	32	6	2	5	2	6	21
12 weeks total	66	57	85	79	50	337	85	44	28	40	66	263

* Operating units or sections

TABLE IX.
SUMMARY OF NUMBER OF NEW COLDS REPORTED, 1948

Area New Unit	Section	Number Persons on Payroll	1st Period 8 Weeks ending Feb. 13	2nd Period 15 Weeks ending May 28	3rd Period 12 Weeks ending Aug. 20
			GLYCOL	NO GLYCOL	NO GLYCOL
7W	A1&HO	108	121	134	66
7W	A2	115	101	168	57
7U	B&K	108	158	235	85
7X	C	102	131	141	79
7V	H	96	93	120	50
Seventh Floor	Total	529	604	798	337
			NO GLYCOL	GLYCOL	NO GLYCOL
8VW	D	93	149	181	85
8X	E&J2	106	126	111	44
8U	G	93	94	88	28
8W	I	109	75	110	40
8V	J1	98	111	156	66
Eighth Floor	Total	499	555	646	263

tacular and easily demonstrated of all the respiratory pathogens, never appeared. Green streptococci were found on one open plate in Area 8U in June 1948, while the vapor content of the air was still high. Staphylococcus albus and staphylococcus aureus of both hemolytic and nonhemolytic varieties occurred frequently. The nonpathogenic sarcinae (lutae and aurantiaca) were quite naturally the most common of all bacterial forms obtained.

Results of Study of Incidence of Colds

TABLES VIII, IX, and X prepared by the Metropolitan Statistical Division from the weekly records of colds give both the details and the summaries for each of the three experimental periods.

The Statistical Division calls attention to the following considerations which enter into the interpretation of these results:

The numbers of individuals in the test group and the control group are not equal; the seventh floor had 529 persons on the payroll and the eighth floor had 499, that is, a 6% difference. Therefore, instead of comparing the actual numbers of colds on the two floors, comparison should be based on the *proportions* of persons with colds. These proportions are shown in Table VIII in detail, with summaries in Tables IX and X.

TABLE X.
AVERAGE NUMBER OF NEW COLDS PER WEEK PER 100 PERSONS, 1948

Area New Unit	Section	Number Persons on Payroll	1st Period 8 Weeks ending Feb. 13	2nd Period 15 Weeks ending May 28	3rd Period 12 Weeks ending Aug. 20
			GLYCOL	NO GLYCOL	NO GLYCOL
7W	A1&HO	108	14.0	8.3	5.1
7W	A2	115	11.0	9.7	4.1
7U	B&K	108	18.3	14.5	6.6
7X	C	102	16.1	9.2	6.5
7V	H	96	12.1	8.3	4.3
			NO GLYCOL	GLYCOL	NO GLYCOL
8VW	D	93	20.0	13.0	7.6
8X	E&J2	106	14.9	7.0	3.5
8U	G	93	12.6	6.3	2.5
8W	I	109	8.6	6.7	3.1
8V	J1	98	14.2	10.6	5.6
Seventh Floor—All Sections		529	14.3 (glycol	10.1 (no glycol)	5.3 (no glycol)
Eighth Floor—All Sections		499	13.9 (no glycol)	8.6 (glycol)	4.4 (no glycol)

First stage December 26 to February 13 (8 weeks) — The seventh floor (glycol) average weekly incidence rate was 14.3 colds per 100 persons during the first period. This rate is 3% higher than the eighth floor (no glycol) rate, namely, 13.9. This 3% difference is not statistically significant.

Second stage February 20 to May 28 (15 weeks) — For this period, the glycol and no-glycol floors were switched. The seventh floor (no glycol) average weekly incidence rate was 10.1 colds per 100 persons; that for the eighth floor (glycol) was 8.6 per 100. The glycol-treated group had 15% less colds than the "no-glycol" group. This difference is not of statistical significance in samples of 500 persons. In this instance, a difference of at least 3.5 colds per 100 persons, or a reduction of 35% at least, might be considered significant.

Third stage May 28 to August 20 (12 weeks) — Neither of the two groups had glycol, yet the eighth floor showed a 17% lower incidence rate than the seventh floor. This percentage difference, although large, is based upon only a small absolute difference, namely, that between 5.3 and 4.4 colds per week per 100 persons. The difference of 0.9 colds is not statistically significant.

Conclusions

THE efficiency of triethylene glycol vapor as an agent for sterilizing room air has been tested by:

(a) Determination of the content of bacteria in the air.

(b) The absentee and weekly incidence rate for minor respiratory illnesses.

Under the conditions of this experiment, we are unable to demonstrate any reduction in the number of air-borne bacteria, nor a reduction in the absentee rate, nor in the incidence rate for minor respiratory illnesses, which were attributable to vapor action.

Obesity
— Report of 800 Cases —

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THE menace of obesity is being recognized as important from a public health standpoint and it is suggested that its prevention or correction would diminish the incidence of degenerative diseases.[1] However, victims of this disorder more often seek advice for cosmetic reasons than because of their interest in health. Perhaps if we explained the dangers of obesity we would secure better cooperation from the patient and his family and friends.

The dangers and disadvantages may be considered under three headings: social, economic, and physical.

SOCIAL. The old saying that nobody loves a fat man still contains a grain of truth which is larger in the case of the fat woman. Obesity results in some degree of social ostracism. Body odors are often more pronounced and increased perspiration is common. Some men dislike fat women no matter how attractive and intelligent they may be; consequently in girls obesity limits their choice of male friends and diminishes their chances for marriage and a home and family of their own. In this and other aspects obesity is more of a handicap to the female.

ECONOMIC. Many jobs are not open to obese applicants. Clothing is more difficult to procure and more expensive. Life insurance rates are higher.

PHYSICAL. An increased incidence of hypertension, diabetes, heart disease, cancer, atherosclerosis, nephritis, toxemias of pregnancy, cirrhosis of the liver, emphysema and varicose veins is said to have been found among the obese.[1]

The death rate is one-third higher among those whose body weight is 20% above the average.[2] The death rate from coronary artery disease is 50% greater among the overweight.[2] Among those with 25% excess body weight the death rate from diabetes is eight times higher than among persons of normal weight.[2]

For every inch the waist measurement exceeds the chest measurement the person may subtract two years from his life expectancy.[3]

Etiology

ONLY food makes fat. Every obese person eats, or at some time has eaten, more food than was required by his expenditure of energy. During the dynamic phase every obese person's caloric intake exceeds his caloric requirement, but Rony points out that during the static phase many fat persons eat very little.[4] Conn[5] disagrees with this idea.

But all of this tells us nothing about the ultimate cause of obesity. Most obese persons were at some time thin or of normal weight. What caused them to increase their caloric intake beyond their caloric needs? If it was due to an inordinate appetite, what brought that about? Does the fat person eat more than the thin one indulging in approximately the same activities? Does the fat person handle his food as efficiently as the thin one? The answer usually is that he does and there is no generally acceptable evidence that he does not. But among animals there is room for doubt.

Rynearson[1] says that hypogonadism in castrated animals has been observed to cause obesity consistently. Krider[6] says that castration in hogs results in decreased activity and increased fattening and in more rapid and more economical gain.

When horses furnished the motive power on the farm, there were one or two horses on nearly every farm that were what we called "easy keepers." Such horses did the same work as the thin ones kept in adjoining stalls and yet were always fat or, as we said, "in good flesh." They were given less feed than the thin horses. Their intake was controlled as they got only what food was given them. Park[7] says that in nearly every bunch of beef cattle there will be one or two "poor doers." That is, they remain thin in spite of getting the same amount of food as the rest of the herd, and yet are apparently in good health. In the average beef breeding herd there will be a few cows that stay in extra good flesh even though the cows are being fed only enough to keep them in breeding condition and the average cow may be in just fair flesh. One of the principles upon which livestock breeding is based is that some animals make more efficient use of their feed, and, by selection, the general efficiency of the herd in this respect can be increased.

Long and his co-workers showed that rats which ate their entire daily ration in a two-hour period gained more weight on the same amount of food than did rats which ate throughout the day.[8]

Mr. George S. Halas,[9] of the Chicago Bears, in discussing body weight and eating habits of football players, says it is difficult to conclude that an individual will gain weight if he continues to eat as heavily after the playing season as he did during that time.

Furthermore, many obese persons are active, intelligent and honest so that their word regarding food consumption should be given serious consideration. Rony[10] quotes Wilder to the effect that there must be some device other than appetite to regulate weight, and that it is easier to understand why some people get fat than it is to understand why most of us do not.

The latest addition to our ideas of etiology is that obesity is on an emotional basis. The

obese person gets that way because eating furnishes a consolation for the frustrations that bedevil him. That seemed to be partially true in 31 cases in this series. However, there seem to be as many thin nervous people as there are fat nervous ones. Ever since Shakespeare's time fat people have been regarded as placid. Furthermore in times of stress thin persons tend to lose weight while fat ones gain. It seems much more likely that the strain, frustration or whatnot merely aggravates a tendency already present.

The Endocrines

THE question as to what role, if any, they play in this drama has been debated for years and is still unanswered. The pituitary has been blamed more often than any other and there is considerable evidence both for and against the idea that it is in some way responsible. Perhaps the most convincing evidence that the pituitary-hypothalamus-midbrain center is involved in some manner is the fact that obesity regularly follows properly placed lesions in the hypothalamus. Heinbecker and his co-workers[11] point out that the maximum degree of obesity occurs after hypothalamic lesions which are also followed by degeneration and loss of the basophilic cells of the hypophysis. They express the opinion that lesions of the hypothalamus, or of the pituitary, or of both, may lead to obesity.

Rony[12] says that while other parts of the nervous and endocrine system probably have some part in the regulation of body weight they do so only to the extent to which they influence the pituitary midbrain complex.

All of the above appears to indicate underactivity of the pituitary and its related centers.

According to Conn,[5] while the endocrine influence in the etiology of obesity may be slight, it is important in determining the pattern of the obesity. He suggests that by carefully noting the distribution of his patients' obesity the physician may be led to the diagnosis also of some endocrinopathy. But if the endocrines have little if any part in causing obesity how do they exert such an important influence in its distribution?

The Distribution of Obesity

IN CUSHING'S disease the obesity is deposited about the face, neck and trunk. The skin is marked by striae about the lower abdomen, iliac crests, lower back, the breasts, the axillae and the inner aspects of the upper arms and thighs. These are said to be due to stretching of the skin. However, two persons of the same height and build may put on approximately the same amount of weight in the same period of time, yet one may have numerous striae, the other none.

Persons who exhibit such striae belong to what was once called the plethoric type of obesity. They are ruddy of complexion, well muscled, and their flesh is firm. They drink more liquids than the average person. They have difficulty in losing weight. As a prognostic sign striae are important.

The marked accumulation of obesity about the pelvic and shoulder girdles was once thought to indicate hypopituitarism. Perhaps it does. At any rate, many women with this type of obesity are victims of hypopituitarism and treatment of the latter condition seems helpful in reducing their obesity.

The adrenal cortex seems to play a part in some cases. Bomskov and Schneider[13] report that some rats survive bilateral adrenalectomy and become giants (weight 350 gm.—normal 200-250 gm.). In all of these, accessory adrenal cortical tissue was found exceeding in mass the removed organs. They concluded that the obesity was due to hyperfunction of the adrenal cortex.

Recently Wilkins,[14] quoting Albright, pointed out that excess of the glycogenetic cortins which tend to cause the utilization of amino acids for glycogen formation and to inhibit protein anabolism may account for the diabetic sugar curve, obesity, evidence of protein deprivation and other signs of metabolic disturbance encountered in Cushing's syndrome.

It would seem that as time goes on the evidence increases that the pituitary and adrenals are implicated in this matter.

Few men seem to believe that the thyroid has a significant role. Myxedema is sometimes associated with a gain of weight which is rapidly lost under thyroid therapy, but there is some doubt as to whether this is true obesity. In this series a number of patients had hypothyroidism, but correction of this by thyroid administration had little effect on their obesity except in the children.

In earlier years it was believed that hypogonadism led to an accumulation of fat in the trochanteric regions. Very few patients in this series exhibited this type of obesity, though many had varying degrees of gonadal insufficiency.

Whether heredity plays any part in obesity is still an unsettled question, there being some evidence both for and against the idea that in some cases obesity is an inherited characteristic. In this series 46 patients presented evidence that heredity played some part.

Treatment

THIS is a simple matter for those who regard the gluttony theory as a complete explanation for obesity. They can explain to the victim that his trouble is due to his laziness and weak will, give him a sales talk on the beauties of living on a semi-starvation diet, outline a diet of 600 to 800 calories per day, and turn him loose.

It is unreasonable to suppose that a single treatment will correct the underlying defect or defects in a condition so poorly understood as obesity. We are no better off in this respect than we were in the treatment of diabetes before the days of insulin. However, in our present state of confusion and ignorance we are com-

pelled to adopt certain general principles which are about as follows:

Whether the fat person eats more or less than his thin friend is a matter of academic interest when it comes to treatment. If he expects to lose weight he will have to eat less than he is presently consuming.

The diet must be adequate as to proteid, vitamins and minerals. We have tried to provide one gram of protein per kilogram of ideal weight for adults and 1.5 grams for children.

In the early years of this study we put adults on a 1000 calorie diet (C. 80, F. 40, P. 80). Recently we have used a 1400 calorie diet and find that patients do better on it. This is probably because most patients adhere rather closely to this diet, whereas on a 1000 calorie diet they frequently do not.

Some attention must be paid to fluid balance. The obese body seems to hold water like a sponge. Its retention in undue amounts seems responsible for the plateau on which obese persons sometimes find themselves. One can reduce the fluid intake, limit the amount of sodium chloride or use ammonium chloride and salyrgan-theophylline. The latter procedure gets rid of large quantities of water in a matter of 24 to 48 hours, but the body seems to re-accumulate it rather quickly so that the net gain hardly seems worth the effort. Reducing the fluid intake and cutting down on the sodium chloride seems to work better. Some patients have a low serum calcium. The administration once or twice weekly of 1 cc. of parathyroid extract is helpful in these.

Occasionally patients are told to forget their diet for a few days, as from Saturday noon till Monday morning, and to eat and drink what they like during that period. This maneuver has occasionally been accompanied by some weight loss —probably because of water loss.

Appetite-depressing drugs have come to the patient's assistance. Well controlled studies seem to show that amphetamine sulfate will depress the desire for food in man as well as in animals.[15] While we have used large quantities of this and allied drugs, they have been rather disappointing in most cases. We have seldom given more than 30 mg. of amphetamine sulfate per day so that our doses could well have been too small. That seemed to be true in at least one case. The young lady lost no weight under our care. A colleague gave her 90 mg. of benzedrine sulfate daily and she promptly lost the desired amount of weight without any apparent ill effects.

Most patients like to take these drugs because they produce a sense of well-being and a desire for increased physical activity.

Psychotherapy plays some part in dieting in all cases. One must impress the patient with the fact that the physician can do no more than assist him to lose weight. Most of the responsibility rests on the patient. One must also secure the cooperation of the family. The mother or grandmother may feel that the patient is being starved—and in our present state of ignorance she is partly right—and that more food must be consumed than is allowed in the diet. Unless this idea can be eradicated or the patient taught to ignore it any reducing regime is likely to fail.

Beyond these general principles the treatment of the obese becomes an individualized affair. For those who believe that endocrine disorders often accompany obesity and that their treatment is helpful in a reducing regime a more detailed study is necessary.

First, one should secure a detailed history in an effort to uncover any etiological factors, psychogenic, endocrine or otherwise.

Second, a careful physical examination is required.

Third, such laboratory work as may be indicated should be done. This should include at least a blood count, 24-hour urine and a basal metabolic rate, and, in adults, where feasible, a glucose tolerance test, blood uric acid determination and, in some cases, an insulin tolerance test.

Fourth, one will proceed to correct such defects as are uncovered by the above procedures.

If the obesity is due to emotional conflicts, as may be true in a small number of cases, the physician should attempt to help the patient solve his emotional problems and thus get rid of the urge to eat.

In this series there were only 31 cases that seemed even probably to fall in this category. A skillful well-trained psychiatrist might have found others. Even these cases have to be put on a reduced caloric intake, but the solving of their mental conflicts is alleged to make this an easy matter.

There are a few who acquired their eating habits in their younger years when their jobs called for a large caloric intake. Later as their jobs became less strenuous and their food requirements decreased they continued to eat the same quantities of food with resultant obesity. The best example of this was on the railroad. In the days of hand-fired locomotives the fireman needed very large quantities of food. When he was promoted to engineer his work became less strenuous but he continued the eating habits of earlier years. A low-caloric diet and re-education of his eating habits are all that is needed in such cases.

All obese people need some re-education as to their eating habits. Probably most persons with good appetites eat more than they need, but only those having the defects that lead to obesity become fat. They will have to be taught to limit their food intake to their caloric requirements.

Endocrine Preparations

PROBABLY most men who treat obesity give their patients thyroid, not because they expect any great help from it but because they have so little to offer the patient. It is a much maligned

drug. If it is not of great assistance, it certainly does no harm if the doctor keeps the patient under careful supervision. Frequent repititions of the B.M.R. are unnecessary. One can easily control the dosage by clinical observation. This is discussed under the treatment of children.

It is generally thought that women tend to gain weight at the menopause. This is by no means always true. In our hands the use of estrogenic preparations in doses sufficient to control menopausal symptoms has been of no help in weight reduction.

In cases of pituitary basophilism the pituitary area should be irradiated by the roentgenologist in the manner described by Deakins and his co-workers.[16]

There have been no demonstrable tumors in this series. But in some patients it was thought that the evidence suggested some disturbance of the pituitary or adrenals, and small doses of irradiation were applied to these areas with gratifying results in a few.

We saw only one case of myxedema. The administration of proper doses of thyroid promptly corrected the condition with coincident weight loss.

Most fat children belonged to the Froehlich type. Of the 391 patients under 20 years of age, 165 were classed as belonging to this type. The term "Froehlich" is not liked by many men because it is applied to cases that differ from the one described by Froehlich. However, the term is generally understood as indicating an obese youngster with hypogonadism. It is used in that sense in this discussion.

The treatment of this condition is a relatively simple matter. The outcome, if treatment is carried out faithfully and persistently, is almost invariably satisfactory to patient and doctor alike. It is argued that these children normalize spontaneously. Undoubtedly many do so, but certainly many do not. One has only to visit a golf locker room or swimming pool to observe many persons who bear the stigmata of this condition. It would seem that we have no right to subject a person to the risk of these stigmata when we have at hand a treatment that is almost certain to prevent this catastrophe.

In this series we thought infection, operation or injury was responsible for the condition in 101 cases. It may be that those who do and those who do not believe in treatment of such cases are talking about different types of cases.

Treatment consists in, first, some caloric restriction. This need not be so severe as in the case of adults. We usually ask these young folks to abstain from candy, pastries and soft drinks, and to limit their intake of bread, butter and 20% vegetables. It is seldom necessary for children to lose much weight. If they lose slowly or even stop gaining, their increase in height will soon spread their weight over a larger, taller frame so that they will achieve a normal weight in this way.

Second, they should all have thyroid in such doses as can be tolerated without tachycardia, tremor of the outstretched hand, nervousness, irritability or insomnia. The administration of thyroid to young girls occasionally seems to disturb the menstrual periods. If this occurs the thyroid should be stopped for two weeks and then resumed in smaller doses. There is no occasion for frequent determinations of the B.M.R. Thyroid seems more helpful in these than in any other type of case.

Third, injections of some chorionic gonadotropic preparation in doses of 100 to 200 units twice weekly. Results are better if 0.5 cc. of a crude anterior lobe extract is given in the same syringe at the same time. Posterior pituitary extract should be included with this in doses just short of that amount which causes intestinal cramps, faintness or nausea. This can be determined only by trial, but rarely exceeds 5 minims of the obstetrical variety.

Fourth, if the genitalia do not respond to this within 90 days, testosterone propionate in doses of 10 mg. twice weekly may be given for one month when the gonadotropic preparation may be resumed, or methyl testosterone may be given by mouth in doses of 5 to 10 mg. twice a day. If girls have reached the age of puberty without establishment of their menstrual periods at regular intervals, some oral estrogen should be given three weeks out of each month until the periods are established.

Fifth, the urine should be examined for sugar 30 days after the treatment is started and every three or four months after that. Occasionally glycosuria develops in the course of these injections. If this occurs, all treatment except thyroid and the dietary restriction should be stopped.

A great many women belonged to what was once called the pituitary-type—that is, they were of average height or less and their obesity was confined to the pelvic and shoulder girdles with very little above the clavicles or below the elbows and knees. Most of these women began to gain weight after pregnancy. The story was that they were thin up to marriage; many of them weighed only about 100 pounds at that time. Their gain began after the first pregnancy and increased with subsequent ones. They might have nursed their first baby a few months but produced no milk for the following ones.

These women were put on a reducing diet of 1000 to 1400 calories. They were given thyroid in tolerance doses. All were given pituitary extracts, a crude anteriod pituitary extract and such doses of posterior pituitary extract as could be tolerated without annoying intestinal cramps, faintness or nausea. The amount that could be tolerated was carefully determined by testing the patient's response to increasing doses. In most cases, but in all cases showing a high sugar curve during the glucose tolerance test, the blood sugar was determined one hour after the injection of the determined dose. If the sugar showed a significant rise, no posterior

pituitary extract was used in treatment. The urine should be examined for sugar about every 90 days during treatment. Both pituitary extracts are given in the same syringe at the same time, and, when possible, twice weekly. Most of these women claim that the posterior pituitary extract produces such a sense of well-being that they insist on continuing these injections even when they make little effort to adhere to the diet.

All who could tolerate it were given benzedrine sulfate or dexedrine sulfate or similar drugs said to have the power of dulling the appetite. In most cases these did not seem particularly helpful.

Estrogens and androgens are not helpful and should be used only to correct the symptoms of such deficiencies.

Posterior pituitary extract is the most valuable of all the endocrine preparations we have used, except the chorionic gonadotropins where those are indicated. Even in these cases posterior pituitary extract is helpful.

Rowe and Lawrence[17] said that the obesity associated with pituitary malfunction was "stubbornly resistant" to dietary treatment, and that it was usually impossible to reduce weight and keep the patient well at the same time. Cushing[18] noted that one of his patients with pituitary basophilism had great difficulty in losing weight by dietary restrictions and that when he managed to lose a few pounds found himself weak and unable to attend to his business.

Women in this group had great difficulty in adhering to their diets. The use of pituitary extracts seemed to help them in this respect.

Prognosis

CHILDREN seem to overcome eventually the tendency to be fat and then go on their way without much regard for diet. Adults, as a rule, do not fare so well. Those whose obesity is due to some emotional upset are alleged to maintain a normal weight once their emotional conflicts are resolved. Experience with this series does not support that contention, but then maybe their conflicts were not properly ironed out.

Irradiation of the pituitary in cases of basophilism relieves the patient's excess appetite, at least temporarily.

Most adults can be taught new eating habits so that they live comfortably on a maintenance diet. This requires time and patience on the part of both patient and physician. In most cases nothing like a cure is brought about.

Many patients do poorly and stick to the physician and his diet but a short time because he makes the matter too much of an ordeal. There is no reason for asking any human being to try to get along on 600 or 800 calories. Most patients can be induced to live on 1400 calories and get along very well on that amount of food. They may not lose rapidly on such a diet, but speed is not essential. A loss of one pound per week is sufficient.

Persons who have had tuberculosis lose weight with surprising ease and speed, so that any reducing regime should be undertaken with great caution in such instances.

Persons who have many striae about their pelvic or shoulder girdles or breasts lose weight with great difficulty and maintain their loss with difficulty. As a prognostic sign striae indicate difficulty for both patient and doctor.

Discussion

IN THE course of this study over 1200 patients have been seen, but ony 800 were incuded in this report. These ranged in age from 16 who were under 10 to 12 patients past 60 years of age. Six hundred and sixty were under 40 years of age.

They came from midde income American families and all were ambulatory. Only two were hospitalized and they for very brief periods. The large number of young persons may explain why so few cases of hypertension and diabetes were seen.

Thirty patients had hypertension; six patients had diabetes; three patients had both hypertension and diabetes—four of the diabetics were in the group classed as due to overeating.

While 173 of this group had some pituitary, thyroid, or gonadal disorder or a combination of these, no etiological factor could be found for the endocrinopathy.

Five hundred and seventeen patients had some pituitary disorder.

One hundred and sixty-five belonged to the Froehlich type. In 68 of these their trouble followed some infection; in 33 it followed an injury or operation; in 15 it seemed to be on a hereditary basis; and in 49 no causative factor could be found.

The adults fell into the following etiological groups:

Ninety-four followed a surgical operation.

Sixty-four followed pregnancy.

One hundred and two followed an infection.

Forty-six seemed to be on a hereditary basis. That is, they had obese parents or siblings or both, and no other etiological factor could be found. It has seemed to us that of all the endocrinopathies hypopituitarism was most often an hereditary affair.

Thirty-one claimed they ate more when under an emotional strain. Many of these also had obvious pituitary and gonadal disorders.

Two hundred and thirty-nine were classed as due to overeating. As already stated, 173 also had some pituitary, thyroid, or gonadal disorder for which no cause could be found.

Lawrence and Rowe[17,19] thought that a high uric acid (4 mg/% or more) and a low glucose tolerance curve were indicative under certain circumstances of pituitary dysfunction. As these determinations are easily done in the ordinary office laboratory, they were done in some of these cases with the results shown below.

Among the Froehlichs:

Sixty-eight due to infection: 35 uric acid determinations, seven were high; four glucose tolerance tests, three were low.

Thirty-three due to operation or injury; 20 uric acid determinations, nine were high; two glucose tolerance tests, one was low.

Fifteen due to heredity; nine uric acid determinations, two were high; two glucose tolerance tests, both low.

Forty-nine etiology unknown: 30 uric acid determinations, seven were high; five glucose tolerance tests, three low.

Among the entire hypopituitary group of 517, uric acid done in 419, high in 159; glucose tolerance done in 324, low in 184; both done in 318, uric acid high and sugar curve low in 74.

In the etiological groups the following results were found:

	Uric Acid		Glucose Tolerance		Both Glucose Tolerance and Uric Acid	
	Done	High	Done	Low	No. Done	Uric acid high Sugar curve low
Heredity 40	35	12	30	16	30	4
Pregnancy 64	55	21	47	21	45	8
Infections 102	84	25	67	39	62	10
Operation 94	84	37	72	42	71	23
Overeating 173	159	50	126	65	125	26
Emotion 16	15	9	11	9	11	5

Ninety-five patients had red or purplish striae in one or all of the following locations: lower abdomen, the iliac crest, breasts, anterior axillary line and inner aspect of the upper arms. In 83, uric acid determinations were done and found high in 37 patients. A glucose tolerance test was done in 57. A low curve was found in 38. Eighteen patients had both.

We thought patients having a low sugar curve had a better outlook than the others. We could use both pituitary extracts in these. A curious phenomenon follows the administration of posterior pituitary extract to women of the "pituitary type." A redistribution of the obesity often precedes any marked loss in weight so that their clothing seems to fit more loosely though the scales show little loss of weight. Perhaps this is in line with Conn's[5] observation that the endocrines are influential in the pattern of obesity.

In the Froehlich group the onset of their trouble was preceded in 101 cases by an infection or trauma, surgical or otherwise. In the adults 260 placed the onset of their obesity after an infection, pregnancy or operation. These three factors may reasonably be expected to affect the pituitary adversely in some cases. Perhaps our own experience in this group furnishes some slight additional evidence that the pituitary is in some way concerned with obesity.

Summary

THE etiology of obesity is unknown. Probably different etiological factors are present in different cases.

In this small series the onset of obesity followed infection, operation, pregnancy and injury often enough to suggest that these factors were in some way responsible.

All of these may be reasonably suspected of putting some strain on the pituitary.

The presence of striae in the skin indicates a patient likely to experience difficulty in losing weight.

Many obese patients are discouraged from continuing a reducing regime because the diet is made too burdensome. A more liberal diet is more apt to be followed.

Speed of loss of weight is not essential.

Pituitary extracts have been potent agents in my hands.

Whatever role the endocrines may eventually be found to play in obesity, there seems no doubt that the treatment of such endocrinopathies as affect the obese patient will help in a weight-reducing regime. Certainly most obese patients are more to be pitied than censured. They are entitled to all the help our meager knowledge of the subject allows us to give them.

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Backache and the Orthopedic Surgeon

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BACKACHE is a symptom, not a disease nor a diagnosis. It is so common that few people reach adult life without having had back annoyance at some time. The causes are legion; certain characteristic complaints, however, may give a clue to the possible etiological factor. Various phases of backache, as seen in the practice of the orthopedic surgeon, are discussed.

Thumbnail sketches of some of the more frequent causes of backache are presented: Pain after exertion may suggest mechanical strain. Pain and stiffness on change of position are common complaints caused by local irritation (myofaciatis, tendinitis, periarthritis or even arthritis) of an area which is potentially weak and the symptoms may be associated with absorption from a distant focus of infection. A history of back pain associated with a ruptured disk is usually not pathognomonic. However, pain along the course of the sciatic nerve, burning in character, which is neither relieved by rest nor aggravated by activity, and often fails to respond to palliative treatment, may be due to a ruptured lumbosacral disk and may be an indication for early surgery. Low back pain, early referred to both extremities, associated with a disturbed plantar and absent abdominal reflexes and a Brown-Sequard syndrome (muscle weakness in one extremity and sensory disturbance in the other) may be indicative of a spinal cord tumor. In spinal malignancy the pain is usually worse at night; the patients are often more comfortable sitting with the legs over the side of the bed or on a chair, or they may walk about for several hours, off and on, during the night.

Backache which awakens the patient in the early morning hours, abates with activity and does not recur until the next morning, is frequently due to a sagging spring and mattress which permits the lumbar curve to flatten, with resulting strain on the ligamentous attachments. Patients who have atophacious gout may have backache. The discomfort may occur at any time and may abate with activity as, for example, playing 18 holes of golf. Patients with backache due to local irritation and congestion associated with prostatitis, endometritis or a diseased, congested or retroverted uterus, usually complain of localized pain in the midsacral area.

SINCE backache is a symptom which may be associated with many factors, the need for a detailed history is evident. The patient usually gives an account of the current episode, but a detailed history beginning with the first recollection of back annoyance is helpful in localizing the sites for x-ray study, interpreting the films and analyzing the case. While the symptoms may be referred to only one site, not infrequently more than one region of the back may be involved.

If, on examination, the posture of the trunk is structurally and anatomically good, the response to treatment is usually better, recurrence is less likely and the prognosis for relief of backache is more favorable. Conversely, patients with poor posture are more prone to complain of recurring episodes of back annoyance. If the backache is not due to injury or static back strain and the examination reveals a relatively normal back, the physician should be on the alert for trouble elsewhere. For example, backache was relieved in one instance after an astragulectomy was done for a calcaneus deformity of the foot due to infantile paralysis. In another patient with marked flexion deformity of the hip from an old tuberculous process, an osteotomy of the upper femur relieved the back annoyance, while elevating the shoe to compensate for a half inch of shortening alleviated the back annoyance in another. The husband of one patient remarked that his wife had been studied for backache by 18 physicians. The orthopedic examination of the back gave negative results and further investigation was advised. Finally, an operation for endometrosis corrected that condition and the back annoyance abated.

A patient may have an injury, mild or severe, and complain of backache. A detailed history and examination may disclose other pre-existing disturbances such as arthritis, absorption from potential areas of infection and many of the other conditions discussed in this presentation. If the back is structurally normal, recovery, as rapid as is commensurate with the injury, is to be anticipated; if the back is structurally weak, the posture poor and the body resistance low, recovery may be retarded; chronic backache or frequent recurrence of back pain may ensue. It is not uncommon for laborers to suffer prolonged back disturbance, even after slight trauma. This may be associated with occupational stress and strain and with potentially lowered general resistance because, as a class, their attention to hygiene and preventive medicine may be inadequate.

Congenital anomalies of the spine, as such, are usually not a competent cause for backache. However, they may predispose to arthritic changes which may be associated with back pain. Statistical studies usually show that anomalies of the spine in patients who complain of backache are no greater in number (about 20%) than similar findings in a control group.

Hypertrophic spurs of the vertebral bodies are seen in more than 50% of patients over the age

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of 40, regardless of symptoms. Motion of the spine, for the most part, occurs in the apophyseal or interarticular joints. As long as these are not involved, spur formation does not usually interfere with motion, is not associated with muscle spasm, and may merely indicate strain due to work or age. Even though marked degrees of spur formation may be present on the vertebral bodies, the apophyseal joints may not be involved. This condition is properly designated as arthrosis. For the diagnosis of hypertrophic spinal arthritis to be tenable, there should be associated muscle spasm and restriction of motion, and x-ray examination should show narrowing and irregularity of the interarticular joint spaces and subchondral sclerosis, as well as spur and new bone formation. Atrophic arthritis of the spine shows syndesmophytes or calcification in the spinal ligaments, involvement of the interarticular facets with absorption of the cartilage and narrowing of the joint spaces.

For a diagnosis of traumatic arthritis to be tenable, the disturbance must be associated with the effects of trauma and resulting strain localized to the site of injury. Also, x-ray examination made soon after injury should give negative results and subsequent study show evidence of arthritis. If x-rays made at the time of injury showed a pre-existing arthritis, then subsequent films should show aggravation of the condition and later studies should show attempts at repair. If, after efficient treatment, the symptoms persist, it may be assumed that they are due to arthritis or other disturbances which were present before the injury occurred and not to the trauma, per se.

Rupture of the intervertebral disk with protusion of the nucleus pulposus as a competent cause for backache, has been discussed at considerable length in the literature of the past few years. Formerly, it was stated that a ruptured disk was responsible for 90% of all cases of low back pain, especially if there was sciatic radiation, and that a great many of these required surgery. Sufficient time for study has elapsed to prove that the disk syndrome is not the prime answer to the problem of low back pain. Some of us consider that ½ of 1% is more nearly the number of patients who require surgery for low back pain associated with possible disk symptoms. The number of cases associated with disk problems which suggest the need for surgery is probably some place between the two figures, but, in the writer's experience, it more closely approximates the lower figure.

In about 75% of the patients with ruptured disk, a history of trauma is elicited. About 95% of disk lesions occur in the lumbar area; the nerve roots of L4, L5, or S1 are usually affected, so that pain referred along the course of the sciatic nerve is a common complaint. Involvement of the third lumbar root is seen only occasionally; in such cases the pain radiates along the course of the femoral nerve, in the anterior thigh. If the disk causes pressure on the fourth lumbar root, pain may radiate across the pelvis, especially on the side of involvement. Lesions of the fourth lumbar disk have been referred to as the "silent disk" because the reflexes may be normal. The reflex of an irritated or involved nerve root may be normal, diminished or absent. Persistent, burning, annoying irritation along the course of a nerve is often caused by continued pressure on the nerve root due to a ruptured disk. When the involvement is below the third lumbar area, clinical examination usually shows a flatness, flabbiness and loss of muscle tone in the gluteal area, posterior thigh and calf; when the third lumbar nerve root is irritated, similar changes occur in the anterior thigh.

Restriction of straight leg raising, Lasegue's and Patrick's signs, sciatic scoliosis, muscle spasm, restriction of certain back motions and many other orthopedic findings usually associated with a low back disability on a mechanical basis, may also be present in patients with ruptured disk syndrome. However, it has been our continued experience that these signs are usually minimal when the patient has a disk lesion, whereas the neurological manifestations such as numbness, tingling, hypesthesia, lessened response to cold and heat, are more pronounced. If the orthopedic signs are severe and the patient has a ruptured disk, then, even though surgery is done, the untoward orthopedic signs usually abate slowly. The pain along the course of the nerve in the extremity, however, has usually abated by the time the patient has reacted from the anesthetic. The convalescence is usually better with adequate orthopedic postoperative care.

While a disk may be sufficiently damaged to cause symptoms, the injury need not be so severe as to cause a protrusion of the nuclear material. That is probably why so many patients with symptoms which suggest damage to the disk and irritation of the nerve root, or with dermatone irritation, make a good recovery when treated conservatively. Furthermore, routine surgery for disk irritation has not proved to be a cure for the patient with symptoms of low back and extremity pain. Francis Grant, Professor of Neurosurgery at the University of Pennsylvania, paraphrased Churchill's "blood, sweat and tears" and said "a patient must first have suffered such severe pain and discomfort before surgery is done for a ruptured disk, that he will be satisfied with partial improvement, since relief from all symptoms is not usual even after surgery." The pain referred along the distribution of the involved nerve root usually abates, but the back pain may persist because of poor back mechanics and degenerative changes.

MOST patients are entitled to a test of conservative treatment, since the greatest majority respond favorably and recover without recourse to surgery. In disk lesions, as in many others associated with low back pain, the patient must learn to live with his back if he is to have relative comfort. This usually applies even when

surgery is done. If, under a conservative regime, recovery does not obtain or recurrences are too frequent, surgery may be considered. A myelogram may help confirm the diagnosis and is particularly indicated in questionable cases. An air myelogram is recommended because the associated irritation is minimal.

Whether or not fusion of the spine is indicated after disk removal, is still being discussed. It has been our practice to fuse the spine if, in addition to the disk symptoms, there is evidence of arthritic involvement of the local area, poor back mechanics or a history of repeated episodes of back trouble. Theoretically, removal of a ruptured nucleus pulposus should be associated with compression of the disk because of the absence of the buffer material. There should also be derangement of the interarticular joints with irritation of the nerve roots in the adjacent foramen. This, however, does not always happen. When the lumbosacral joint is fused, strain is transmitted upward to an area which is much less suited to withstand it. With the tissues exposed for disk removal, the extra surgery for a fusion is relatively minimal. It is therefore better to evaluate the need for fusion before, or at the time of, initial surgery than routinely to consider fusion as a secondary operation if the back symptoms should persist. Disk surgery usually relieves the pain referred to the extremity from nerve root irritation, but all too often the symptoms of back pain may remain. Fusion may be an answer to the problem. If fusion is combined with removal of the ruptured nucleus pulposus, the patient is permitted to be ambulatory in plaster within two to three weeks; if fusion is not done, plaster is not used and the patient is ambulatory much sooner.

The role of the orthopedic surgeon and the neurosurgeon in the treatment of low back pain associated with disk lesions is worthy of mention. Because of his training and experience, the orthopedic surgeon is well equipped to deal with the initial study and conservative treatment of low back problems. In cases which require surgery, the neurosurgeon and the orthopedic surgeon may operate together for the patient's advantage, the one operating for the lesion causing the nerve irritation and the other fusing the spine when this is indicated. For the reasons already stated the orthopedic surgeon is perhaps best suited to supervise the postoperative care and convalescence and to guide the patient's rehabilitation. Certainly the disk lesion, per se, is not the entire answer to the problem. Treatment entails attention to poor back mechanics, degenerative changes and frequently the trauma of function on a potentially weak area.

Back pain may be localized or referred; the referred pain may be, and most frequently is, associated with dermatone, rather than nerve irritation in the nature a a true neuritis. When a local area in the back is the site of pain ("trigger point"—Steindler) the afferent nerves carry the impulse to either a local segment or a more diffuse area of the cord. Depending upon the extent and degree of irritation, the efferent pain impulse may be experienced at the various areas of sensory supply associated with the segments of the cord affected, i.e., dermatone irritation. Conversely, when a disk is ruptured and the nucleus pulposus presses on a single nerve root, then mechanical nerve irritation, specific in distribution, occurs and involves the area supplied by that one nerve root. Dermatone irritation may also occur. Procaine injection of trigger points often helps to exclude true nerve or disk pathology as a cause for the symptoms; it may also relieve the backache.

A true sciatic neuritis may also occur. It may be on a toxic or infectious basis, associated with avitaminosis or lead poisoning. In such cases the knee jerks are apt to be hyperactive and the ankle jerks may be retarded or absent. There is usually an atrophy or flabbiness of the gluteal area, posterior thigh and calf. These findings are not usually associated with the so-called lumbosacral or low back derangements, but may be associated with a disk lesion. If injecting the trigger point relieves the pain from all the areas supplied by the segment of the cord affected, as well as from the local site, dermatone irritation is indicated and not a true neuritis.

Static or postural strain is observed in at least half the patients who seek treatment for backache. The back is mechanically weak when compared with the normal as a standard. Pain occurs after exertion and is relieved by rest. When the posture is faulty, the individual is more prone to have backache which is less amenable to treatment and recurrences are frequent; on the other hand, when the posture is good, the response to treatment is better and recurrence is less likely.

Strain, regardless of cause, may produce backache. If the examination of the back gives negative results, then the strain may be due to weak feet, bow legs or knock knees; it may also be related to undue activity such as a new occupation, a new automobile seat, exercise or any factor which causes added back strain. The posture may or may not be favorable, the site of back pain is usually indefinite, the extremities may be normal and, when strain is relieved, the back annoyance usually tends to abate.

Backache may be associated with many intra-abdominal and intra-thoracic disturbances; these need not, however, be responsible for the back symptoms. If the examination of the back shows some change from normal posture, the effects of strapping or support as a therapeutic test should be noted before subjecting the patient to intensive palliative treatment or surgery, unless it is indicated by the local pathology, per se. The gastro-enerologist, gynecologist and internist know how often visceral pain may cause parietal neuralgia, as well as symptoms referred to the back. All these findings, however, may be present without back annoyance. At times, backache may be caused by an irritation of the iliopsoas muscle, due to an inflammatory condition of the adnexa,

an appendix or rectal distention. Numerous other disturbances of intra-abdominal or intrathoracic organs may also induce muscle spasm. The patient assumes a strained attitude in an effort to relax the spasm and this, together with the faulty posture, may cause backache.

JUST what is the role of so-called focal infection as a causative factor in the symptoms of backache? Pain and stiffness on change of position are common complaints. Absorption from diseased focal areas may cause local irritation such as myofaciatis or tendinitis which may induce muscle spasm and pain. Treating the areas of focal infection may help to prevent recurrent episodes of back pain. The teeth, tonsils and paranasal sinuses, perhaps because they are so accessible, have gained the reputation of being the chief offenders. The bowel, adnexa, gallbladder and other intra-abdominal and intrathoracic organs may be at fault but are not as accessible for study. The use of support or other measures to relieve strain, especially if the back mechanics are poor, is usually rewarded by prompt relief of pain. A colleague studied a group of patients with back pain associated with so-called focal infection. He found that only 3% were relieved by treatment directed to the local areas of infection; the greater majority were benefitted by mechanical support to relieve the back strain. Furthermore, the symptoms associated with so-called focal infection, i.e., pain and stiffness on change of position, were more prevalent in patients with poor posture.

Normally, motions of the cervical, dorsal and lumbar regions of the spine occur simultaneously. Patients who have a low threshold of pain may exaggerate their symptoms, but this is usually apparent to the examiner. A patient who is exaggerating may perform a particular motion or movement guardedly, through a lesser range than normal, but the motion is usually performed in a symmetrical manner. When the trunk is moved as a unit from the hip joints with apparent mass restriction of motion, the patient is usually malingering, unless study shows arthritis or a diseased process so advanced that the cause for such restriction is evident.

Robert Burns, of Wisconsin, described a "kneeling stool test" for malingering. The patient kneels on a backless stool, the ankles and legs are held firmly and he is asked to pick up an object from the floor. This can be done even when there is considerable disturbance in the spine, providing there is no disability in the hips. A patient who is malingering, while protesting his inability to reach the object, will usually bend sufficiently far forward or to the side to indicate a good degree of back motion and flexibility, thereby belying the previous mass restriction when motions were tested in the sitting and standing positions.

LORDOSIS: Patients with a moderate increase in the lumbar curve may only complain of pain after being in bed, usually for some hours. The annoyance is usually relieved by activity. The symptoms are due to strain at the insertion of the ligaments which bind the vertebrae and occur when the lumbar curve tends to flatten during recumbency. If the lumbar curve is marked, pain may occur even during the activities of an ordinary day because the parts are unable to tolerate or compensate for the strain. There is usually no muscle spasm and motions are free. In contradistinction, the patient with an arthritic spine usually has muscle spasm and the lumbar curve tends to persist on forward bending. Treatment to relieve strain is indicated. During recumbency, a boarded bed and firm spring and mattress offer excellent protection and support. If the degree of lordosis is severe, postural exercises and support are helpful.

Back pain which awakens the patient in the early morning hours, abates with activity and does not recur until the next morning, often bespeaks a sagging bed. On examination, these patients may have an increase of the lumbar curve. This type of backache may be corrected by the use of a firm spring and mattress or a boarded bed.

Lordosis is also a finding in patients with poor posture (static weak back), often called the "three C curves." The head is held well forward, instead of erect, there is an increase in the forward cervical and lumbar curves and the backward dorsal curve; the balance is improper and mild structural changes may occur. The appearance of a patient with faulty posture is poor, greater effort is required for activity because the ligaments and muscles are stretched, and efficiency is less than normal. They usually have dis-ease, rather than disease. The strain and other concomitant effects of poor posture act as a very slight but continuous source of irritation, so that these individuals are often prone to be argumentative, snappy and easily perturbed. Owing to the faulty attitude of the head, neck and spine, the chest is flat and cannot expand adequately and the intrathoracic organs are crowded, so that these people may suffer frequent colds and even chest diseases. With relaxation of the abdominal wall, ptosis occurs with resulting loss of intra-abdominal tension. This affects the efficiency of the portal circulation, as well as the circulation to the extremities which is dependent, in appreciable measure, upon good intra-abdominal tension. Goldthwaite is of the opinion that the disturbance of circulation due to poor posture is a competent and exciting factor in causing or aggravating arthritis, especially in the lower extremities, and the measures to restore favorable posture are essential in the treatment.

FLAT BACK: Strain, often associated with periods in bed after illness and surgery, may result in backache as the lumbar curve flattens and causes ligamentous strain. The discomfort may be more annoying in patients with flat back

than in those who have lordosis. Patients changing to low-heeled shoes have an associated backward tilting of the sacral area, a flattening of the lumbar curve (flat back) and stain in the lumbosacral region with resulting pain. The condition of flat back and its attendant difficulties becomes clear when it is likened to the weak or flat foot.

A flat back (lumbar area) is evident on inspection; motion is limited, especially as the patient assumes the erect attitude, and the annoyance increases on hyperextension. While patients with arthritis have many of these findings, an associated lordosis which persists on forward bending is usually present. During surgery, a pad should be placed under the lumbar area as a prophylactic measure to prevent strain. During bed rest, undue relaxation of the back may be minimized by the use of a firm spring and mattress and an elevation under the mattress, in the lumbar area (folded baby blanket).

BACKACHE, regardless of the cause, frequently becomes evident when the strain, often muscular and ligamentous, is disproportionately greater than the strength or the ability of the part to compensate.

In studying patients with low back pain, x-ray examination of the spine, particularly of the affected areas, is advisable. Antero-posterior, lateral and oblique views are minimal requirements in order to evaluate the disability. On occasion, the clinical examination may give essentially negative results and the x-rays may reveal findings which may confirm and justify the complaints. In the writer's opinion, the most valuable information may be gleaned from the oblique views which clearly show the interarticular or apophyseal joints which are so frequently involved in patients with backache. Spot films taken at the site of major trouble as indicated by the clinical examination, may show early changes which may not be evident on general roentgen back study. A lateral view, centering at the lumbosacral joint, is helpful. This is particularly true in a study made with contrast media, especially air, because disk disturbances are usually most frequently found in this region and detail is seen which might be lost on a full lateral view of the lumbar apine. An antero-posterior spot film, with knees flexed to flatten the lumbar curves, shows a more true appearance of the fifth lumbar body. Pelvic films permit study of the hips and sacro-iliac joints; the oblique view is especially helpful in visualizing the sacro-iliac joint. Traumatic, infectious and disease processes and even evidence of tumor may be shown on x-ray study. Stereoscopic views may add to the information gleaned from roentgen studies.

The sacro-iliac joint is considered by many to be the prime culprit responsible for low back pain; actually, the construction is so rugged that this joint is only occasionally the site of trouble. It is a true joint, lined with cartilage and it has a synovial sac. It is sturdy in construction and both joint surfaces are irregular and seem to intermesh. The joint gains added strength from the wedged sacrum, the keystone in the pelvic girdle, to ensure stability and protect it from vertical strain. Torsion strains, however, do occur, but essentially the only normal motion is the slight rocking in the antero-posterior plane. The joint acts as a buffer and transmits strain from the lower extremities through the pelvis to the trunk and superimposed structures and, conversely, from the trunk through the pelvis to the lower extremities. Minor injuries with torsion strain may cause severe symptoms, even in patients with no previous history of backache. The sacro-iliac joint may also be the site of repeated minor traumata associated with faulty posture. Atrophic arthritis or an acute or subacute inflammatory lesion such as may follow puerperal sepsis, may cause pain and disability on the basis of a true sacro-iliac lesion.

The lumbosacral joint is the true culprit responsible for many disturbances which were previously attributed to the sacro-iliac. This joint is anatomically and mechanically vulnerable and is structurally weak in many ways, particularly when compared with the sacro-iliac. Anatomically it is the site where the movable spine meets the sacrum which is fixed in the pelvic girdle. There are 24 vertebral bodies above it and each has many joints. The lumbosacral joint supports the superincumbent weight of the head, neck, trunk and upper extremities. Furthermore, the spine is not straight but has physiological curves; the base or sacrum is not horizontal but has an average obliquity of 50° and the fifth lumbar meets the sacrum in such a way that the joint at the lumbosacral angle averages 125°. Even under normal conditions the strain on the ligaments and the lumbosacral facets is great. Conditions which tend to increase the pelvic obliquity and the lumbosacral angle, such as poor posture, an exaggerated lumbar curve, a shortened extremity or a dislocated hip, increase the burden on the joint, especially on the articular facets and the ligaments. There is also a shearing strain at this site of very free motion in the spine and, as always, stability and movement are at opposite poles as regards strength.

A detailed discussion of the back, structurally and anatomically, in relation to the conditions producing backache, together with descriptions and illustrations of the orthopedic examination, were previously published.[1] The examination therein recorded might well augment this paper. The further clinical impressions and experiences herein described are presented in the light of knowledge gained since the publication of that paper in 1935.

It should always be remembered that a patient is being examined, not just a back; also that the causes of backache are legion: systemic, local, traumatic, developmental, infectious, neoplastic, related and correlated to almost every branch of medicine. The patient's gait is studied. He is observed as he undresses for the examina-

tion. Posture and range, freedom and symmetry of motion are noted in the sitting, standing, prone recumbent and right and left side lying positions. Extremity length and circumference are measured, and sensation, reflexes, circulation and muscle strength are tested. A study of the joints of the lower extremities, the intra-abdominal and intrathoracic organs and a rectal examination are all essential for complete study.

In recent years, study has resulted in better appreciation, localization and diagnosis of back disabilities, but relatively little advance has been made in treatment. Treatment should be directed primarily to the patient and then to the back. Prophylaxis is of major importance. Whenever possible, the cause of backache should be ascertained and corrected or alleviated. Strain should be relieved and body mechanics improved. The patient should be taught to accept his handicap and restrict himself to those activities for which his back is sufficiently sturdy.

Support is effective as an aid in relieving strain. Since about one-third of each 24 hours is spent in bed, the spring should be firm; angle iron bars or a crossed strap iron or steel spring offer maximum support. A ⅜ in. plywood board, the full length and width of the bed, may be placed between the spring and mattress to prevent sagging and is most useful as a temporary measure. Commercial boards are unsatisfactory because they are usually too short. The proper place to purchase a bed board is at a lumber yard, not a department store. A horsehair mattress, half tail and half mane, firmly packed and without innersprings, is excellent. A four-inch foam rubber mattress is also satisfactory if it is used in conjunction with a very firm spring.

The so-called sacro-iliac belt has little place in the treatment of low back pain, since the pelvic girdle is rarely the site of trouble. A high, closed back corset is useful; it should come to about the ninth thoracic vertebra (about three fingers breadth distance below the lower angle of the scapula) and should be laced in front or closed with buckles and straps. The corset may be reinforced with steel uprights which conform to the contours of the trunk, especially in the paraspinal area. A garment which is laced in back is inefficient because the laces do not offer adequate support and protection where it is most needed. A Hoke corset is an excellent garment. A Knight spinal brace gives even greater support. In the writer's opinion, the lateral bars of the brace are essential adequately to relieve strain. Plaster and celluloid jackets are useful adjuncts in treatment. A plaster jacket is excellent as a therapeutic test to determine if surgery may be expected to relieve strain. When back strain is associated with lower extremity disability, balanced shoes, Whitman plates, braces, surgery and other measures are beneficial.

Postural exercises, as well as other physical measures, are of major importance in helping to relieve strain in a large percentage of patients with backache. A good definition of posture is "attitude of mind and body." It is impossible for the patient to achieve good posture unless he has the will to work and exercise. In order to obtain good posture, the patient must be instructed, guided and supervised in exercises for the weak back. Constant repitition in assuming good posture and exercising helps to shorten and strengthen the relaxed tissues and stretch the contracted parts. It may take a year's work on the part of the patient, with occasional supervision after the first few weeks of instruction, before good posture becomes a habit. Most adults are too lazy to exercise and support is therefore given to relieve strain. For children, however, exercises should be considered imperative, since support tends to make the muscles lazy and, when removed, there is usually a further postural slump.

Heat is usually comforting. A warm bath for 20 minutes is helpful. If the degree of heat is such that on leaving the tub the patient feels languid, lazy and a bit sleepy, then the bath has been useful, sedative and beneficial. If, however, the patient is enervated, jittery and restless, then the bath was probably too hot or too prolonged. Moist heat in the form of a bath is usually available and may be as beneficial as many types of expensive equipment. Local use of moist, hot compresses, followed by rubbing, is often comforting. Massage has its greatest value in patients who enjoy it and find it soothing. Exercise, and walking is an excellent one, may well take the place of rubbing and massage.

Salicylates have been found to be the most useful form of medication in patients with low back pain, especially if the pain is associated with stiffness on change of position. The salicyl radical is the active ingredient. Acetysalicylic acid (aspirin) is the most useful because the salicyl radical is held in less firm chemical union. A patient with an idiosyncrasy to aspirin may tolerate the natural salt of sodium salicylate. It is our practice to give a patient 15 grains after meals and at bed time, with a full glass of water; if necessary, the dose is increased. *Pulvis ipecac et opii* (Dover's powder) sweats, warm baths and traction are all useful aids in overcoming pain and muscle spasm.

PATIENTS who injure their backs in industry or complain of backache in the course of their work, would probably recover more rapidly, lose less time from work and be on compensation for shorter periods, if they were immediately hospitalized and studied. If the disturbance is minimal, this will soon be ascertained and the patient may be discharged and returned to his work, none the worse for the precaution. If, however, the injury should be severe and the patient is not hospitalized at once, he may lose much valuable time in going back and forth to the clinic for x-ray and other studies, and a relatively minor disability may, from a compensation standpoint, assume formidable proportions.

Surgery of the mechanically weak back may

be indicated if the condition is aggravated by certain congenital deformities, localized arthritis or traumatic arthritis, or if the effects of trauma and other developmental and acquired disturbances are of sufficient magnitude so that palliative treatment gives only temporary relief and recurrences are frequent. These cases, however, constitute only a small number of the patients seen with low back disability. Most patients who require surgery for low back disturbances may also need fusion of the lumbosacral region. Structurally and mechanically this site is best suited to withstand the strain associated with daily living and activity. The surgeon should always be aware of the fact that fusion operations transfer the strain of activity to a higher level in the spine which is structurally and anatomically less able to tolerate the strain at the junction of the movable spine with the newly fixed portion. The patient must therefore learn to live with his back as it is and to put no greater strain on the part than it will tolerate. If he learns this, then surgery, in many instances, might be unnecessary.

SUMMARY AND CONCLUSION: An attempt has been made to discuss the symptom of backache in a practical manner. Most patients respond favorably to palliative treatment, regardless of the duration of symptoms, providing irreparable damage has not occurred. With careful analysis and palliative treatment, backache may often be prevented or corrected. A single episode of backache may occur. If the posture is poor, recurrence is more likely, but the severity and frequency of the episode may be lessened by intelligent and intensive treatment. Surgery is necessary in a relatively small percentage of cases.

Some surgical indications were mentioned, but surgical procedures were not discussed in this presentation. Despite the so-called advances presented in the literature, there are still some patients who respond very slowly and poorly to the best that medicine has to offer. This indicates that there is still much to be learned regarding the etiology and treatment of backache.

Reference

1. RECHTMAN, A. M.: Backache. *J. Med. Soc. New Jersey*, October, 1935.

Entrance to Health Division Building, Oak Ridge National Laboratory, Oak Ridge, Tennessee. (Fred R. Williams, Photographer)

A Medical Program in the Petroleum Industry

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WE HAVE in our company a cross section of all the various activities connected with the oil industry ranging from exploration to marketing of petroleum products. Obviously, with the variety of activities involved in such widely divergent operations (i.e., refining, merchant marine, production, office work, marketing, and pipe line) there can be no one definite medical program or set-up which will meet the needs of our various operations. This makes the establishment of a preventive industrial medical program in the oil industry a most difficult task. Geography and job variations make the task much more difficult than establishing a program for an industry where operations are more or less uniform and under "one roof."

We can establish a general policy or pattern for medical policy, but the details of operation must be tailored to suit the operating departments. I would like to present in general terms our company's medical program. I will then discuss some operating problems relating to our widely scattered operations, particularly in the production, pipe line and marketing departments.

We feel that a company is its people and the health of its people is the "health" of a company. Companies pay great attention to keeping their buildings, tools, machinery and other equipment in first-class operating condition. Of much greater importance, however, is the necessity of keeping the men and women who operate this equipment in good condition. A man or woman who is ill physically or mentally cannot fulfill his obligations to his job, family, or to himself. He is hampered in his chances for promotion and restricted in his activity both on the job and away from it.

For these reasons General Petroleum Corporation has a health program which not only fulfills the company's obligations under laws in the various states in which it operates, but goes way beyond in offering its employees a wide variety of assistance in the maintenance of good health.

It is said that the Chinese pay doctors as long as they are well and stop paying when they are not well. In other words, they believe in preventive medical service and fall back on curative service only when preventive measures fail. General Petroleum's medical program puts this same emphasis on preventing illness.

It is thoroughly understood by the employees that the company's medical program is not competitive with private medical practice. The company encourages full confidence between the employee and his private physician and stands ready to assist in cementing a firm bond of confidence between them.

Many employees who "feel well" may be a little lax in consulting their own physicians, and conditions arising from very obscure beginnings may become serious before they are observed and brought under control. The company, therefore, has laid great emphasis on the value of periodic physical examinations.

WITH these over-all objectives in mind, it is necessary to consider the general basis on which a medical program can be developed. Obviously, it has to be beneficial to both employees and the company, and it must be consistent with the purpose of the company. Further, under the laws of the various states in which General Petroleum operates, the program has to meet certain compensation law requirements. In addition to this, the program should be in keeping with current accepted thinking in this field of medicine as contained in recommendations by the Council on Industrial Health of the American Medical Association, the American College of Surgeons, and local medical societies.

The Medical Director of the company, acting as health officer, is charged with the responsibilities of developing, administering, and generally supervising the conduct of the company's medical program. In general, this can be divided into three groups of activities which might be called preventive service, advisory and diagnostic service, and treatment.

It has already been stated that the welfare of its employees is a matter of utmost importance to the company. We must, therefore, "begin at the beginning" in seeing that the candidates for employment through pre-placement examinations are suitably placed, and that later through their years of service they have the advantage of periodic medical examinations. They must be kept advised of their physical condition from year to year. The physical examinations are, of course, confidential between the Medical Department and the employee except as they may apply to the employee's ability to continue in his work without being a hazard to himself or others. Obviously, the results of none of these examinations should be used unjustly to exclude an employee from work or to narrow the field of competition among employees for better jobs.

Another important service that the Medical Department performs in its efforts to keep the company's employees in good health is its studies on adequate lighting, ventilation, safe water supply, etc.

Excessive fatigue is detrimental to good health, and such factors as unnecessary noise, improper chairs and benches at which to work, can cause

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undue fatigue. For this reason the Medical Department assists in investigating and eliminating these and other factors which contribute to undesirable working conditions. Fatigue prevention also includes investigation and recommendations as to adequate rest periods and leaves of absence.

In the oil industry there are potential hazards connected with certain types of work which require special study on an industry-wide basis. These hazards are kept under control by constant vigilance and study by safety engineering, industrial hygiene and medical personnel, and by research on the part of such organizations as the Medical Advisory Committee of the American Petroleum Institute.

An employee must be both physically well and mentally well, otherwise he will not be happy on his job, and while he may have a strong heart and good lungs and everything else necessary to good physical condition, there may be problems disturbing him mentally that prevent his giving full attention to his work. Emotional disturbances among employees are noted and reported by foremen and supervisors so that the Medical Department can study them early. This prevents situations which create inefficiency and bad working conditions for others in the department. Mental hygiene, therefore, is an important component of the program.

The company expects the Medical Department to be an information service to help the employee gain and maintain good health. Through the use of slide films, distribution of literature, and the holding of meetings, etc., such subjects as nutrition, health hazards, physical fitness, communicable diseases, and first aid are presented to employees.

Good eyesight is extremely important in work performance and to general health. Poor eyesight is conducive to safety hazards for the employee and for his fellow workers and the Medical Department does all that it can to see that employees who need glasses get the proper lenses for their particular occupations and ocular defects. The Medical Department also studies the job requirements for eyesight and works with the safety department in seeing that safety goggles with proper lenses are provided for various types of working conditions.

Although the company does not maintain a medical service competitive with the private physician, through complete diagnostic facilities it acquaints the employee with his physical condition and assists him in maintaining good health. This applies particularly to those cases involving excessive absence from work due to sickness, physical inability of an employee to carry on his specific job, and those borderline cases where an employee's symptoms may proximate illness of industrial origin.

For industrial illness or disease, the Medical Department provides treatment on the spot where we have our own facilities, and, where necessary, we refer employees to the proper outside medical facilities for complete and adequate care. The department works very closely with company designated doctors and makes sure that proper standards for diagnosis and treatment are maintained wherever the company has employees.

Where employees need first aid on the job for minor non-industrial diseases and injuries that may temporarily interfere with their ability to complete a shift, treatment is given with the object of relieving symptoms and keeping the employee at work, but treatments are limited to one visit by the employee for the particular illness, injury or disease in question. Such treatments are given only when the employee presents the proper referral slip signed by his supervisor or foreman. Emergency care is also available for serious diseases not arising out of employment or due to employment, but the employee is referred to private physicians or hospitals as soon as possible for further diagnosis and treatment.

The Medical Department also provides special treatments on the written request of the employee's private physician. Such treatments are definitely limited to cases where there will be extreme hardship on the employee with regard to inconvenience, and the Medical Director, who must approve the treatments, discusses the case with his private physician.

Another service the Medical Department offers the employee is assistance in obtaining discounts on drugs or medicines prescribed by private physicians in the treatment of non-industrial diseases. This service is limited to those cases where there is justification from the standpoint of hardship as certified by the employee and the private physician.

OF THE medical program items mentioned, only a few are practicable for scattered production, pipe line and marketing department workers. Except for conducting periodic health examinations and a limited amount of health education with emphasis on first aid, a Medical Department can have little direct contact with the employees of the production, pipe line, and marketing departments. They must depend mainly on services rendered by physicians designated by us to do physical examinations and to treat occupational injuries and diseases. Geography and distribution make it impossible to render them the same number of benefits of a preventive industrial health program as employees in locations where there is a sufficient concentration of activity to justify a company-operated program. Periodic examinations by the corporation Medical Director of production, pipe line, and marketing workers at scattered locations have not been entirely satisfactory. It is impractical to have adequate stationary examination facilities distributed in the field for this purpose. The most hardy roustabout, rotary helper, or driller expects a dignified type of examining procedure and he expects the examination to be complete.

We hope to initiate a mobile field Medical Department which would visit the scattered opera-

tions of the company periodically for the purpose of rendering these employees the benefits of annual and special physical examinations, advisory and diagnostic service, and instruction on first aid and other aspects of health education. The idea of a mobile unit is not new. We are all familiar with the tuberculosis control units sponsored by municipal, state and private health agencies. These units, containing a photo fluoroscope, were devised mainly for chest examinations. With rearrangement of the space, they can easily be adapted to general types of physical examination and laboratory work. Excellent examples of such adaptation are the field mobile units of the Carter Oil Company of Oklahoma and the Humble Oil Company of Texas.

THE mobile unit is a solution to the old problem of providing physical examinations throughout scattered production, pipe line, and marketing operations and in remote sections of the country. The unit can be completely equipped with a modern x-ray machine, a photographic dark room, an electrocardiograph, a sight-screener for rapid eye examination, and full facilities for routine laboratory examinations including microscopes, centrifuges, sterilizers, and other instruments or supplies needed for complete physical examinations. The unit can be divided into three sections. A small compartment in the forward end may be used as a laboratory and to perform most types of tests necessary in diagnosis. The x-ray room may be placed in the vehicle's midsection and should include the darkroom. The x-ray room can also be used for the electrocardiograph and for eye testing with the sight-screener. The rear section of the mobile unit is the examination room and may be fitted with a desk, examining table, sterilizers, and lights and fixtures. All equipment must be installed to withstand road shocks.

The staff of a mobile unit should consist of one physician, a laboratory and x-ray technician, and chauffeur. With proper planning of itinerary, it is possible to give each employee throughout production, pipe line, and marketing operations a thorough physical examination once a year. When not being used for physical examinations, the unit can be used to great advantage for first aid instruction and health education programs.

The services of the unit should be sold on a voluntary basis. This is not difficult when proper educational steps are taken with both employees and management. Examinations should be complete and the results given to the employee at the discretion of the examining physician. Diagnoses usually should not be furnished management. They should receive placement information only in those cases where a condition is found which might render the employee a hazard to himself or others. All dealings between the physician and the employee must be strictly on a physician-patient relationship. These units should perform diagnosis only, and, if ailments are found, employees should be referred to their private physicians for treatment.

In addition to the advantages obtained from the standpoint of preventive industrial medicine, such a unit is a definite factor for good morale in making production, pipe line, and marketing workers feel something is being done for them, even though the services are not on as great a scale as those in a central stationary medical department.

WHAT are the benefits of the medical program discussed? Each year companies prepare an annual statement which reports the profits and loss for the period and reflects the company's standing in matters of investment in tools, equipment, buildings, securities, etc. Some companies are satisfied with this review of their activities, but many others, and General Petroleum is definitely among these, feel a company's greatest asset is its people. If employees fail to take advantage of services offered by the Medical Department, they lose individually, and the company loses as a whole. If poor health, accidents, or disease prevent making effective use of the many tools and opportunities provided by the company, again both the employees and the company are the losers. The company knows this, and provides a medical program with full endorsement at the executive level. The employees know it, and profit through their full cooperation in the various phases of the program.

The Chronic Absentee

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THERE is a great deal of human feeling in business organizations. This, if not always obvious, comes plainly into view when a valued worker is overtaken by a major medical catastrophe. An operation, a severe injury or other critical circumstance which requires time off from work is met with sympathetic understanding. This is, no doubt, instinctive, for no human being is immune against the possibility of such a calamity. A person's job is saved for him. Others in the department do extra work. Everything is done to help out in a pinch when a member of the team finds himself in a predicament which no human wisdom could possibly have averted. The situation in the department is very much like that of an emergency. People pull together in a spirit of helpfulness, as they would to aid a friend in peril. They work harder. Those in supervision suffer many inconveniences without complaint. Measures are taken and arrangements made to tide things over for the duration. The returning employee is greeted with felicitations.

It is much different in the case of the chronic absentee. The person who reports out sick today and was absent a week ago last Monday and, as history repeats itself, will probably be missing from the ranks next week or next month—that person is the chronic absentee. The emergencies created by his absence become irritating to those who work alongside of him and to his supervisors. He becomes a problem when he reports for work as well as when he is out sick, for no task can be assigned him without anxiety lest he leave it in mid-air. Regardless of the justifiability of his absence on medical grounds, he becomes a second-rate member of the team, an industrial cripple who, for one reason or another, may be carried along as long as the business can afford it.

THE problem of the chronic absentee is presented to the industrial physician as a medical problem. That, on the surface, is what it is, for the employee has stated illness as the cause of absence and has been cleared through the medical department on his return to work. His supervisor or the personnel consultant may have private opinions on the matter, as may the men he works with; but they express themselves guardedly if at all, and look to the industrial physician to bring medical skill to the task of clearing up the absences.

The physician sees this employee in the recurrent cycle of absence and return to duty. He knows that a person can be sick one day without showing visible signs of it the next. His diagnosis of the cause of absence, though sometimes made with mental reservations, rests on the employee's statement, for there is nothing else to go on. Yesterday's stomach ache or head cold leaves no objective sign today.

The physician would like to help this man clear up his absences. In doing so he would be serving the employee, who is jeopardizing his security and chances for advancement more than he may realize; and he would be utilizing his medical training to the advantage of all, thus giving a tangible return for the investment the organization had made in his services.

Though the problem lies at the door of the medical man, it is not always a medical one. If, happily, examination reveals a correctible physical impairment and the employee is inclined to correct it, the solution is simple. Unfortunately, however, such cases are the exception. Chronic absentees seldom show any physical impairments which would account for their frequent absences. Major physical impairments are more often encountered among employees who are always on the job. These, with their impaired cardiac function, their sinusitis, duodenal ulcer or arthritis, suffer their discomforts quietly and help form the backbone of the organization. Furthermore, casting an eerie light on the whole matter is the well-known fact that absenteeism decreases when jobs are scarce and increases when jobs are plentiful. Notable elements in the problem of absenteeism are the employee's incentive to hold his job and, closely allied with this, his incentive to maintain good health.

The physician confronted with the problem of absenteeism may decide to limit his activities to those which fall strictly within the scope of his medical training and leave non-medical matters to others. This division of labor, though it has much to commend it, is not practicable. The problem cases, as they arise, seldom turn out to be purely medical or non-medical ones. Medical and non-medical elements are so closely interwoven in the situation that no one could dissect one from the other. The physician, if he would accomplish anything at all in solving these problems, must consider the non-medical factors of the case along with the medical. In doing so, he performs a specialized function which he, alone, can perform and which can be of great value to the organization and the individual employee.

LACKING objective signs of disease, or any other definite data, the physician must consider the possibility that the employee may or may not have been sick. In the absence of definite proof

of malingering, the physician gives the patient the benefit of the doubt. He must conclude, tentatively, that the employee has been absent because of some illness, small or great. The possibilities of the situation do not end here, however.

The following must always be considered:

1. The employee may be one who gives in too easily to minor complaints.

2. The employee may not be guarding his health by taking proper food, exercise and rest, or by securing and following the best medical advice he can obtain.

3. He may be an alcoholic with a Monday hangover.

These elements are, of course, influenced by the strength of the employee's desire to hold his job and fulfill its responsibilities. The physician, while losing no opportunity to discover any physical condition which can be remedied must, in the matter of absenteeism, deal with the factor of incentive.

IN DAYS gone by, the family physician was sometimes called on by the parents of a growing child to explain certain matters of biology, delicately known as "the facts of life." A similar task now falls upon the industrial physician. The facts of life which he is called on to explain to chronic absentees deal with certain realities in the business world. They are:

1. A business organization depends on the cooperative efforts of people who are healthy enough to work regularly at their assignments.

2. The basic reality on which the existence of the individual's job rests is that someone is needed to carry out the details of his particular assignment.

3. Regardless of whether absence is justifiable on medical grounds or not, absence constitutes a detriment to the organization and to the individual's career. He is that much less effective as an employee.

4. An aura of suspicion always hangs over a chronic absentee, and this cannot be waved aside by any statement the company doctor may make in his support. Supervisors and personnel people may be too polite to tell him so, but this is the truth.

5. It is expected of an employee that he take every possible measure to keep himself physically fit for his job. Frequent colds and stomach upsets, the most usual causes of absence, can be prevented in most cases.

6. It is well known that chronic absenteeism is not chiefly a medical matter but is a matter of the individual's incentive and his regard for his job.

NO MAGIC results can be expected from the presentation of this information to absentees. Chronic absenteeism seems to be a disease all in itself, often associated with deficiencies in other respects, sometimes approaching the status of a mental defect. In a number of cases, however, the trouble is simply ignorance of the facts. The industrial physician can perform a useful service by imparting these facts to an employee in a way which leaves no doubt that the employee's health is his own responsibility.

Something for Nothing

IN A bulletin to its members, March 12, 1949, the West Virginia Chamber of Commerce has this to say concerning socialized medicine and the 81st Congress: "Socialism is the consequence, although perhaps not the objective of legislation being presented to the 81st Congress. The arguments supporting this conclusion were never better stated than by the *Saturday Evening Post*, in an editorial titled 'We Could Slip Into Socialism While Hating It,' copy of which editorial accompanies this bulletin. The compulsory National Health Insurance program, commonly called 'Socialized Medicine,' is one of the best illustrations of the current effort to adopt Socialism in the United States under the guise of an attempt to promote the 'public welfare.' Calling for an initial contribution of employees and employers equal to 3% of wages, the inevitable deficit on the eventual annual cost of $14 billion would be made up either by a general tax, presumably on all incomes, or a further payroll exaction. Americans should mark the fact that a large share of the current 'Marshall Plan' aid to England is required merely to make up the deficit incurred on the British 'National Health' program. When Dr. Morris Fishbein, of the American Medical Association, asked Sir Wilson Jameson, Chief Medical Officer of the British Ministry of Health, for a single copy of every form and every regulation used and issued by the bureaucrats administering the British 'National Health' Act, that official inquired, 'Doctor, have you chartered the Queen Elizabeth to take you home?' That the American people, accustomed as they are to the finest medical service in the world, should voluntarily agree to its exchange for the type of medical service being foisted on the English is nothing short of ridiculous."

—*West Virginia Medical Journal*, April, 1949.

The Treatment of Head Colds with an Antihistamine Drug

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IT IS HARDLY necessary to mention facts and figures about the disability, lost time from work, or the economic loss to the nation or the individual caused by the common cold or other upper respiratory disease.

In general practice, but more particularly in an industrial medical department, the common cold and its sequelae are the most numerous ailments encountered. The common cold causes more discomfort for the individual and for the general population than any other single disease known. For many years in this particular medical department there have been many different drugs and combinations of drugs used in an attempt to cure or lessen the discomforts of the common cold with varying degrees of success.

The greatest incidence of colds is from September 15 to April 15 in this section of the country, and, as has often been stated, the lack of fresh air and lack of exposure to the sun during the winter months undoubtedly play a part in the causation of colds. This study was made over the period from September 15, 1948, to December 15, 1948, at the suggestion of GEORGE GAGLIARDI, M.D., Chief of the nose and throat service at the Framingham Union Hospital. He had used an antihistamine drug in the treatment of head colds in a girls' school, on a small group of students, with very encouraging results.

The antihistamine drug chosen for this study was pyribenzamine hydrochloride (tripelenamine HCl) in tablet form containing 50 mgm. per tablet. The principal reason for trying an antihistamine drug in the treatment of head colds was the fact that antihistamine drugs, such as pyribenzamine, alleviate the symptoms of hay fever so successfully, particularly the rhinitis, also the probability that some allergic factor is responsible for the beginning of many head colds.

Each person coming to the medical department with symptoms of a head cold who had not had the symptoms for more than 48 hours was given the pyribenzamine tablets. Each was given four tablets of the 50 milligram pyribenzamine with instructions to take one tablet every four hours, and all were asked to return the next day for further treatment and to report the results of the treatment. If the symptoms of the cold had not disappeared the patients were given four more tablets with the same instructions again. No one received the pyribenzamine tablets for more than three days. The patients were also warned that if the medication made them drowsy while at work, they should report back to the Clinic for a cup of black coffee. This was done as a safety measure, as many of the employees work with and on fast moving machinery, and to be sleepy would be dangerous.

Five hundred and ten persons were treated with pyribenzamine tablets. They were all very sure they had a cold or that a head cold was starting. They were all adults whose ages ranged from 18 to 65 years, and they based their "diagnosis" on many past experiences with head colds. When results of this study were checked; no one had anything more than an upper respiratory infection and, as far as could be determined, no other disease developed later with the exception of seven persons who lost time from their work and who reported that they had had grippe. So those patients were not too far off in their diagnosis, nor we on ours. In other words, the symptoms were not the prodromal symptoms of disease other than of a coryza, or head cold. Only five of the group admitted having any specific allergy that they had been aware of.

The predominating symptoms in these patients were running nose, slight irritation (smarting or burning sensation) in the nasopharyngeal area, slight "achy" feeling in the muscles or joints, slight cough or sore throat. On examination and observation of the patients, 75% showed some of the following objective symptoms: increased redness of the membranes of the nose, throat conjunctival and watery nasal discharge. Ten per cent of those treated showed a slight rise in temperature and pulse rate.

Sixty percent of the persons treated on the first day of their colds returned on the second and third day for further treatment and to report results of the treatment. The remaining 40% had to be contacted by the medical department personnel. Sixteen persons left the employ of the company before the final check-up could be completed.

Results of the Treatment

ONE HUNDRED AND TEN persons reported the results of the treatment as excellent—all symptoms of the cold had disappeared in 24 hours or less. All were surprised at the rapidity of the "cure"; some of this group reported that their colds had previously always been severe in nature. Others in this group of 110 persons said they were cured after taking two tablets!

Two hundred and four persons reported the results of the treatment as very good, the "cold" symptoms had disappeared in two or three days or the discomfort was so slight that they felt further treatment was unnecessary.

Eighty-three persons reported as the result of the treatment that they were "greatly improved," and had no lost time from work, but there were noticeable symptoms with minor types of discomfort or annoyance such as "stuffy nose," cough, some sore throat, malaise, or they did not

consider that they were entirely free of symptoms for a period of six or seven days.

Ninety-seven persons reported no improvement whatever in the alleviation of the symptoms or discomfort of the cold, and all felt that the treatment did not benefit them in any way.

Twenty-two persons in this latter group had untoward symptoms as a result of the treatment. The most common complaint was that the tablets made them dizzy or drowsy—seven reported dizziness; six reported drowsiness; five reported severe headache; four reported digestive disturbances (squeamishness or cramps).

Of the entire group of 494 only seven persons reported that they had lost any time from work; and six of these were in the group who reported no benefit from the treatment.

Summary

FIVE HUNDRED AND TEN persons were treated with an antihistamine drug in the early stages of a head cold:

Four hundred and ninety-four were reported on as to results of treatment.

Three hundred and fourteen persons were "cured" or were made symptomless within three days.

Eighty-three persons were helped or symptoms lessened by the treatment, but the colds lasted six or seven days.

Ninety-seven persons received no benefit from the treatment whatever, and 22 of these persons had an idiosyncrasy to the drug.

Only seven persons lost time from work.

Of the 494 persons treated and checked, 75% were cured or had their symptoms alleviated by the treatment.

Conclusion

THE treatment of head colds in their very early stages with 50 mgm. tablets of pyribenzamine hydrochloride seemed to produce more so-called cures and more relief from annoying symptoms than any other treatment used in our medical department in the past 28 years.

The above results could probably be obtained with any other like antihistamine drugs manufactured by reputable pharmaceutical houses.

AMA Section on Preventive and Industrial Medicine and Public Health

FOLLOWING is the program for the first two sessions of the Section on Preventive and Industrial Medicine and Public Health at the Annual Meeting of the American Medical Association at Atlantic City, New Jersey, June 8 and 9, 1949. The sessions will be held at the Ritz-Carleton Hotel.

Wednesday, June 8, 1949

SYMPOSIUM ON AIR POLLUTION (Smog):
Prefacing Remarks:

"Of universal concern to the populace as well as to industry is the effect of smog upon community health and property. Much has been written in lay journals which is erroneous but which has led to unfounded fear and agitation. While it is true that engineers and administrative officers have discussed the problem among themselves, too few of the known facts have been presented before city health officers, industrial physicians, and the general practitioners who must answer questions daily regarding the noxiousness or innocuousness of air pollution. The purpose of this SYMPOSIUM ON SMOG is to bring to focus the latest factual data, to eradicate erroneous opinion, and to offer a guide to future planning."—R. T. JOHNSTONE, Secretary.

1. "The Aspects of Smog: (a) Chemical; (b) Topographical; (c) Meteorological"—H. F. JOHNSTONE, Urbana.
2. "Recent Advances in the Identification of Air Pollutants"—J. A. HAAGEN-SMIT, Pasadena.
3. "Causes, Constituents and Physical Effects of Smog Involved in Specific, Dramatic Episodes (Donora, Meuse Valley)"—H. H. SCHRENK, Bethesda.
4. "General Health Aspects of Industrial and Community Smog"—WILLIAM ASHE, Cincinnati.
5. "Approved Control Measures"—W. C. L. HEMEON, Pittsburgh.
6. "Administration of an Air Pollution Control Program"—L. C. MCCABE, Los Angeles.
7. "Summary and Discussion of Papers"—ROBERT A. KEHOE, Cincinnati.

Thursday, June 9, 1949

CHAIRMAN'S Address: "The General Aspects of Pneumoconiosis"—O. A. SANDER, Milwaukee.

"The Piezoelectric Theory of Silicosis"—SILAS EVANS, Milwaukee.

"Anthracosilicosis; Clinical and Pathological Aspects"—H. A. SLESINGER, Windber.

"Pulmonary Functional Impairment in Anthracosilicosis"—HURLEY MOTLEY, *et al*, Philadelphia.

"Disability Evaluation in Occupational Pulmonary Disease"—GEORGE A. WRIGHT, Saranac.

Antihistaminic Drugs in the Therapy of the Common Cold

JOHN M. BREWSTER,
Captain (MC) U.S.N.

ALTHOUGH the common cold is universally considered to be a minor affliction, its cost in days lost from employment has been reckoned at 100,000,000 a year[1] and the annual financial bill to the American public has been variously estimated at between one and three billion dollars.[2] Research has demonstrated a filterable virus as the causative organism[3,4] but as yet no specific treatment has been found[5,6] and vaccines have not been generally accepted as being of benefit consistently.[7] Despite this gloomy picture, it is believed that unusual promise for the future lies in the performance of some of the newer synthetic antihistaminic drugs as disclosed in the following report of a study of their effects in the treatment of the common cold. Their chemical structures, mode of action, therapeutic uses, and side actions have been well covered in articles by Feinberg[8] and Waldbott.[10]

In a previous article[11] the unusually satisfactory results from the use of Benadryl as a therapeutic agent were reported. Encouraged by these findings, a new series was started in October, 1947, to determine whether similar excellent results could be obtained with other antihistaminic drugs. "Clinics" or stations for the treatment of "colds" were established at three focal points on the compound. All hands including the civilian employees were encouraged to report for treatment at the earliest possible moment after the onset of a cold. Pyribenzamine, Thenylene, Neoantergan, and Histadyl as well as Benadryl, were included as the fundamental drugs used in the study. Since these drugs have a sedative effect, phenobarbital was first chosen as the control medication. However, it was hurriedly abandoned when the complaints of the recipients threatened the success of the study. The combination of codeine sulfate with papaverine hydrochloride, as advocated by Diehl[12] was then chosen as the control medication. It offered the advantage of being generally accepted as the preferred treatment for the common cold and thus provided a real criterion with which to compare the antihistaminic drugs.

The original objective was to determine the percentage of colds which could be aborted. As the series progressed it became plain that in spite of our best efforts most of our cases were going to be well-established colds; accordingly, therapy at any stage of a cold was undertaken. An effort was made to give the various drugs to patients in succession and without selection. Thus approximately every sixth patient received a control medication and an equal number of patients received one of the five drugs.

Patients were examined to exclude more serious diseases from the series. Because it is virtually impossible to make a differential diagnosis in the early stages of the acute upper respiratory infections,[5,6] the patient's diagnosis of a "cold" was accepted if the examining physician failed to find evidence to disprove it. This is in keeping with the conclusions reached by others.[13]

Study made at U. S. Naval Hospital, Great Lakes, Illinois; published in *U. S. Naval Medical Bulletin*, 49:1, 1-11, January-February, 1949, and re-published here by permission.

Since the therapy under study was to consist of antihistaminic drugs it was considered important to determine whether or not any cures obtained occurred only in patients who were known to be allergic. Patients thus were quizzed as to previous existence of any manifestation of allergy, with emphasis on history of hay fever, asthma, eczema, migraine, chronic indigestion, periodic attacks of sneezing, and "sinus trouble."

Perennial allergic rhinitis as defined by Kern[14] and by Griep[15] was ruled out in so far as possible by history and examination. Smears of nasal secretions and differential blood counts were taken in a few cases late in the series to determine the presence of eosinophilia as an index to an allergic reaction. The number examined was too small to offer conclusive evidence, but there were cures in patients without eosinophilia.

The dose for adults was arbitrarily set at 50 milligrams for the antihistaminic drugs and at 16 milligrams each of codeine sulfate and papaverine hydrochloride for the control medication. Each patient was provided with enough medicine to carry him until the next morning and was instructed to repeat the doses at four-hour intervals when awake, for at least three doses (more if symptoms persisted) and to report to the clinic the following morning. In order to establish their limitations as well as their therapeutic properties, no other medication was given with the antihistaminic drugs except stimulants to counteract their sedative effect. A 10-day follow-up check was made in most patients after discharge. Only ambulatory patients were treated in this series which included females as well as males. The youngest was six years of age and the oldest was 67. The group was made up of personnel attached to the hospital and included dependents and civilian workers.

A total of 572 patients were treated in the period from October 1, 1947, to May 1, 1948. A cold was considered to have been aborted or cured when all signs and symptoms disappeared completely within 24 hours of the beginning of treatment and remained absent for at least 48 hours after all treatment was stopped.

Findings

ALL SYMPTOMS were aborted in 19 (90%) of the 21 patients in whom treatment with antihistaminic drugs was begun within the first hour after the onset of symptoms and in 48 (87%) of 55 patients treated with two hours of onset. One hundred and sixteen (74%) of 156 patients who received treatment within six hours, and 165 (70%) of 234 patients who received treatment within 12 hours of onset were also cured.

A total of 77 patients were used as controls. The first five were given 32 milligrams of phenobarbital every four hours for three doses. However, when all complained of marked drowsiness and that it failed to relieve any of their symptoms, its use was discontinued. The combination of codeine sulfate with papaverine hydrochloride was then adopted as the control medication. Within one hour after onset of symptoms a cure was obtained in one of

the two patients to whom this combination was given. Cure was obtained in five (42%) of 12 patients who received treatment within six hours, and in seven (31%) of 22 patients in whom treatment was begun within 12 hours. In none in which therapy was begun more than 24 hours after onset was a cure obtained.

A personal history recorded in 393 of the 572 patients treated disclosed that 74 had suffered previously from some type of recognized allergic reaction. Data concerning the type of reaction and the effect of treatment in these cases are shown in Table 1. There were 319 who gave no history of having had any type of allergy previously. Antihistaminic drugs were given as treatment to 262 of these, with cures in 105. In 57 given codeine sulfate and papaverine hydrochloride there were five cures.

TABLE 1.
EFFECT OF THERAPY IN CASES OF COMMON COLD WITH PERSONAL HISTORY OF ALLERGY

	Antihistaminic drugs		Codeine sulfate and papaverine hydrochloride	
	Cure	Palliative only	Cure	Palliative only
Asthma	1	1	1	1
Hay fever	4	11	0	3
Urticaria	18	14	1	3
Eczema	1	1	0	1
Migraine	3	1	0	0
Chronic rhinitis		1	0	0
Chronic sinusitis	2	1	0	0
Not recorded	4	1	0	0

It is conceded that the number of controls is small by comparison but adequate (it is hoped) conclusively to demonstrate the superiority of the antihistaminic drugs in the treatment of the common cold in its initial stages.

In three patients treated personally by the writer, earache was an early (within 12 hours) symptom. Inspection disclosed marked injection of the periphery of the involved ear drum. Both the symptom and signs disappeared after three doses of an antihistaminic drug.

All of the antihistaminic drugs studied were found to be effective in aborting colds when taken within the first few hours after onset. In the majority of patients who received the antihistaminic drugs as the sole therapy and where treatment was begun too late to secure an arrest, the resultant colds were of short duration (three to five days). These colds were remarkable because of the absence of complications and the mildness of the symptoms.

As a result of the small dose used, and the short periods in which treatment was required, there were no instances of severe reactions, severe side actions, or toxemia. Side actions noted were drowsiness, and dryness of the mouth; infrequently, headache and dizziness; and, rarely, nausea. A variation in severity of the drowsiness was noted. Benadryl had a pronounced sedative effect in almost every case in which it was used. This was found to be an asset in patients willing to remain in bed during treatment or when used only as the final night dose of antihistaminic drug in any case. However, it was a real hazard in ambulatory patients when more than one dose was taken. Pyribenzamine, Thenylene, and Histadyl all produced a moderate degree of sedation. Neoantergan was found to have little or no sedative effect in the majority of cases in which it was given, and thus became the favorite medication of the ambulatory patients who had had experience with any of the other antihistaminic drugs. All were warned that drowsiness was to be expected and were cautioned to avoid driving a car while under treatment.

To combat the sedative effect, racemic amphetamine sulfate (Benzedrine) in 2.5 to 5 mg. doses or dextro-amphetamine (Dexedrine) in 5 to 10 mg. doses was frequently given with the initial dose of antihistaminic drugs whenever treatment was begun before 4:00 o'clock in the afternoon. These effectively reduced the sensation of drowsiness in most cases and had the happy effect of lifting many patients out of the mild mental depression that is often a symptom in colds. Benzedrine should not be prescribed in the presence of arterial hyptertension, cardiovascular disease, or nervous tension; and to avoid wakefulness at night, neither drug should be taken later than 4:00 o'clock in the afternoon.[16]

One patient, whose wife had had Benadryl prescribed for hay fever elsewhere, in his enthusiasm took 200 mg. of Benadryl within a period of four hours. He became disoriented and confused for a short period of time but recovered completely following a night's sleep. Another patient, with an active chronic duodenal ulcer, was as much impressed with the relief he obtained from ulcer symptoms as by the abortion of his cold.

It has been established that an attack of the common cold provides an immunity lasting from three to seven weeks.[17] It was observed in this study that even the very mild and attenuated colds that resulted from prompt and continued treatment with the antihistaminic drugs conferred a normal degree of immunity. It was further observed that the cure of a cold became progressively more difficult the longer the time interval separating the present attack from the last cold experienced, and that, lacking immunity in the presence of an epidemic, the treatment frequently had to be repeated at two to five-day intervals. Thus, it would seem that when a cold is aborted, we actually postpone it, and that eventually it might become wiser to accept (conceivably select) a mild variety and treat it early and carefully to obtain the immunity it will confer.

Discussion

THE medical literature of the past two years contains many reports of the favorable results obtained with the antihistaminic drugs in treatment of a wide variety of allergic conditions. From this fact, and from the phenomenal cure of the very early colds, it is assumed that the common cold begins as an allergic reaction. This assumption is supported considerably by the pronounced similarity of the symptoms of an acute head cold to those of that other typical allergic reaction, hay fever.

That under normal conditions most individuals harbor pathogenic bacteria in their respiratory organs was demonstrated long ago.[18,19,20] The phenomenon of these pathogenic organisms suddenly assuming accelerated growth and invasive characteristics in the presence of the virus infection of the common cold might well be as follows: (a) cold virus present in upper respiratory tract; (b) trigger mechanism (chilling, ingestion of food or drink to which one is sensitive, inhalation of irritant); (c) allergic reaction producing edema of the mucous membrane of the respiratory tract (localized and

patchy); (d) loss of normal protective power by the thus damaged mucous membrane, which in turn provides a culture medium for the virus and pathogenic organisms; (e) invasion of the body by pathogenic organisms causing complications of the common cold. Assuming the above to be correct, then the common cold is aborted or cured when the allergic reaction is reversed before irreparable damage has been done to the respiratory mucous membrane. This theory also offers a possible explanation of the variation in susceptibility to colds observed among members of any large group of individuals.

Timeliness is of prime importance in the successful treatment of the common cold with antihistaminic drugs, and the effectiveness of the treatment is inversely proportional to the lapse of time following the onset of symptoms before treatment is begun. This feature limits their usefulness. Even in this series where treatment was free, the clinics almost as conveniently located as drinking fountains, and with considerable publicity and insistent urging that patients report for treatment early, the average patient and 75% of those under 25 years of age did not report for treatment until 48 hours after the onset of symptoms. Early treatment was sought by those to whom a cold had become a serious illness, a threat to their jobs or to their social plans. This may prove to be the case generally, but the treatment with antihistaminic drugs should prove invaluable to patients already seriously ill or injured, to the aged, to statesmen, to concert, radio, and movie artists, in large industrial plants, and, conceivably, in certain military or naval operations where manpower is at a premium and where personnel can be controlled. It is believed that real progress in the elimination of the common cold will be made when and if an antihistaminic drug which is effective and yet sufficiently safe to permit the public to purchase it without a prescription is developed.

There will be many who will quite properly challenge the possibility of diagnosing a cold within the first hour of symptoms. When one has been as unusually susceptible to colds all his life as the writer has been, and then lives an entire year without a cold as he has done by the simple expedient of taking one or two doses of an antihistaminic drug at the first hint of a cold, the problem of diagnosis becomes academic.

This was accomplished despite the fact that exposure to acute colds was an almost daily occurrence in his "clinic" for colds.

It is ventured that the elimination of the factors responsible for the spread of colds; the sneezing, coughing, and profuse discharge from the nose, should operate to eliminate a large proportion of the colds that now occur. This we know the antihistaminic drugs will do, in most cases, at any stage of a cold. What the eventual effects of prolonged use of these drugs will be remains to be seen; however, after over two years of rather wide usage, the literature is not yet burdened with adverse reports.

Patients were cautioned and carefully observed during their first course of treatment and when there was assurance that no untoward side actions had been experienced, a small additional amount of the drug, to be kept by the patient for use in aborting future colds, was prescribed. This practice proved unwise from the standpoint of collecting statistics. During late January and February the number of cases appearing at the clinics declined markedly. Investigation disclosed that former patients were not only aborting their own colds, but those of their families and friends.

Conclusions

IT IS BELIEVED that the initial phase of the common cold is an allergic reaction.

2. Antihistaminic drugs, by interrupting this allergic reaction, are capable of aborting the common cold when treatment is begun in the initial phase.

3. The effectiveness of these drugs in the treatment of the common cold is not dependent upon the sedative effect common, to a greater or lesser degree, to them all.

4. Two or three doses of these drugs at four-hour intervals are adequate to effect an abortion of symptoms in 90% of the cases where treatment is instituted within a few hours after onset. Failing this, their continued use as palliative treatment shortens the period of morbidity and eliminates many complications.

5. Complications of colds should be treated with penicillin, the sulfa drugs, or surgery as required.

6. The antihistaminic drugs should prove invaluable in the control of the contagion of the common cold when and if adopted as treatment by the majority or in groups that can be controlled, such as military or naval personnel.

Summary

IN A SERIES of 572 patients with common colds, 19 (90%) of 21 patients in whom treatment with the antihistaminic drugs was begun within the first hour after onset of symptoms were cured. In 116 (74%) of the patients in whom treatment was begun within six hours of onset of symptoms a cure was obtained. It was the consensus of the group receiving antihistaminic drugs that these constituted excellent treatment. The effectiveness of the treatment is inversely proportional to the lapse of time following the onset of symptoms before treatment is begun. Statistics from parallel controls treated with codeine sulfate and papaverine hydrochloride suffered by comparison. In one patient in the series symptoms of a temporarily incapacitating side action occurred from a self-administered overdose of antihistaminic drug.

From the results achieved, it is believed that the incidence of the common cold will be reduced to a startling degree when the antihistaminic drugs are more widely prescribed for early medication of colds, much as aspirin is at the present time. These new drugs, by their action, eliminate the sneezing, coughing, and the profuse discharge from the nose which now is left invisibly on door knobs, faucet handles, hand rails, in the air we breathe, and on other places of contact. If properly and universally used, the antihistaminics could reduce the incidence of colds to near the vanishing point.

The abortion of the common cold is so truly unique, it must be experienced to be appreciated.

[ACKNOWLEDGMENTS—The author wishes to express his gratitude to CAPTAIN H. O. G. WAGNER (MC) USN and Lieutenant, junior grade, B. F. HARPER (MC) USNR, for supervision of treatment clinics; to FRANK KOCJANICH, Hospital Corpsman, first class, for his zeal in collecting and recording the statistical data.]

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Humidification

HUMIDIFICATION used to be something occasionally tacked on to air conditioning to make it "complete." But recently the fact that humidification in itself is important has become known. With winter heating, most offices dry out, and the resulting atmosphere is drier than the Sahara Desert. The relative humidity in the desert averages 22% while that of most offices is 10-15%. This low humidity has a decided influence upon the health and general efficiency of the office employees.

It has long been the opinion of medical authorities that dry air causes many wintertime colds and sinus conditions. The U.S. Health Chart shows a decidedly large increase of respiratory diseases during the heating season. A recent report by Dr. Arlington Bensel entitled "Prevention of the Common Cold" (in the *Journal of The Medical Society of New Jersey*) describes in part the effect of humidity: "Under average conditions and at rest, the amount of water evaporated in the respiratory passages during 24 hours is about 600 cubic centimeters. This will vary considerably depending on individual differences, such as variations in tidal air or respiratory rate. The figure is also dependent on the relative humidity or water vapor content of the inspired air. If the inspired air is saturated with water vapor and at body temperature, there will be absolutely no evaporation or heat loss into it. This actually prevails in some tropical areas where acute coryza is virtually unknown. However, it is our custom to live in artificially heated buildings and inhale warm, dry air which causes a tremendous amount of evaporation from a relatively small area of the mucosa of the nasopharynx. This evaporation is an irritating process. It is also a cooling process; in fact, it is a refrigerating process that requires much caloric energy in the form of heat to counteract. If the relative humidity of the inspired air is low, the mucosa becomes dry in an effort to supply the inspired air with much needed water vapor. The dry mucosa becomes shrunken and fissured. A portal of entry for the virus of the pathogenic bacteria is now open. This secondary stage is characterized by edema and mucopurulent discharge. Then the process may spread by way of lymphatics or by continuity through the submucosa, and later ulceration and actual necrosis of mucous membrane may occur. The relative humidity in the average, heated, American home during the cool and cold months of the year varies from 10 to 50%. With an outdoor temperature of 0° C and an indoor temperature of 18° C, the relative humidity is about 25%. A relative humidity of this low ratio predisposes to upper respiratory infections. . . .If the water vapor in the atmosphere of our homes, hospitals, schools and office buildings can be maintained above 50% relative humidity, it is the writer's contention that the incidence of common colds will be negligible."

Even more startling work is being conducted by the University of Chicago, where already one report has been made which showed that if a 50% relative humidity is maintained, it will stop the spread of diseases like pneumonia, colds, flu and others transmitted through the air. The tests were conducted with Type 1 pneumonia germs, Streptocci and Staphylocci germs. Other tests at a later date, conducted with influenza A virus, showed that this 50% relative humidity was likewise lethal to these germs. Even the glycols, triethylene and propsylene, used to prevent the spread of disease, become more lethal in an atmosphere of 45-50% relative humidity. Because the men and women who work in offices spend more of their waking hours there than anywhere else, frequent absences of personnel can be attributed to the colds and other respiratory ailments contracted in the dry heated air of offices.

It is wrong to assume that an office which is air-conditioned is provided with relief from dry air problems. In recent years most air-conditioned offices have been equipped with individual units which lower the temperature, and reduce the humidity during the summer months. Such units often include heating coils but almost never include any provision for raising the humidity to a healthy level, especially during the winter months when the heat is turned on.

ASSOCIATION NEWS

American Association of Industrial Physicians and Surgeons
—Thirty-Fourth Annual Meeting—

THE Thirty-Fourth Annual Meeting of the AMERICAN ASSOCIATION OF INDUSTRIAL PHYSICIANS AND SURGEONS was held on Thursday, April 7, 1949, during the Industrial Health Conference at Detroit.

The meeting was called to order at 4:30 P.M. by PRESIDENT HAROLD A. VONACHEN. The first order of business was the reading of the minutes of the preceding Annual Meeting at Boston, in 1948. On motions, duly made, seconded and carried, the full reading was dispensed with, the minutes were briefed by the Secretary, and the record was approved.

DR. E. C. HOLMBLAD then presented the report of the Managing Director and Treasurer. In the former, he outlined the increasing activities of the Association and the added volume of office work involved in such matters as the necessary bookkeeping, the details connected with meetings and exhibits, the expanding membership, and, during 1948 particularly, the preparation and distribution of the Association Directory—all of which had resulted in the need for more people in the office, so that he now has one part-time and two full-time office secretaries. He reported the total cost of the Directory as $3000.00. During the year since the last Annual Meeting he had represented the Association in various relations, notably at the President's Conference on Industrial Safety in Washington, and at numerous meetings elsewhere. This is one of his duties that promises to continue, especially in connection with the plans now being considered to hold regional meetings of the Association members in various key centers throughout the country. There is also the importance of having the Association officially represented at the meetings of certain other groups, particularly the management groups which are directly concerned with industrial medicine. Another phase of the Managing Director's activities, which, however, is more pleasure than duty, is the contacts with Association members who visit the offices at 28 East Jackson, Chicago 4, and the opportunities to greet the out-of-the-country guests who are interested in industrial medicine as it is developing here.

As Treasurer, DR. HOLMBLAD said in part: "The Treasurer's Report consists of two parts. The first is the report of the Certified Public Accountants, Martin, Johnson and Bolton, for the year 1948; and the second is the Treasurer's report from January 1, 1949, to March 31, 1949. The audit is incorporated as part of the Board of Directors' and the Annual Meeting minutes and shows a net worth on January 1, 1948, of $16,908.09. The income for the year was $11,789.60, and the expenses $11,225.28, showing a net income for the year of $564.32. The cash balance in the bank December 31, 1948, was $19,865.35, which includes some of the money that is to be used in payment of the 1949 Annual Meeting and convention expense. The second portion of this report shows the receipts and expenditures for January, February and March, and the cash balance on March 31, 1949."

Following motions duly made and voted upon whereby the reports of the Managing Director and Treasurer were approved, the matter of certain amendments of the By-Laws was made the subject of a resolution that the amendments as they appeared in the official Journal of the Association (pages 86 and 87 of INDUSTRIAL MEDICINE for February, 1949) be approved. This resolution was duly voted upon and carried unanimously.

The Secretary, DR. FREDERICK W. SLOBE, then summarized the transactions of the Directors' meetings. He said, in part:

"You heard DR. STACY this afternoon concerning the mine physicians. There has been some delay in the details of getting them into the Association,

A.A.I.P. & S. Past-Presidents' Luncheon.

Standing (left to right): Alfred H. Whittaker, Frederick W. Slobe; Henry S. Brown; Melvin N. Newquist, T. Lyle Hazlett, Harold A. Vonachen, Daniel L. Lynch, McIver Woody, Harvey Bartle. Seated (left to right): Harry E. Mock, Sr., Otto P. Geier, Loyal A. Shoudy, William A. Sawyer, Edward C. Holmblad, Floyd E. Shaffer, Royd R. Sayers, Clarence D. Selby

but it is believed that in about three months' time they will form the next component society. We are indebted to DR. WHITTAKER for another one of his inspirations in the form of a dream, this time concerning a permanent home in Chicago. We realize it is simply a dream, but we have to start things in that stage, and our own permanent home is certainly something to be greatly desired.

"Concerning the American Foundation, as you know, DR. CARLETON has been in charge of the committee on fund raising, and he has done a lot of work in getting this organized. The proceeds having been a little slow in coming in, the Association appealed to its membership last year because we were very anxious to have the first Fellowship established by the Association start in 1948. As a result of the response of individual members, DR. J. HOWARD JOHNSTON is now in Pittsburgh beginning his Fellowship. So all the members of the Association have an investment in DR. JOHNSTON, and we are assured it is a good investment. In the meantime the campaign for fund raising is going on and will be intensified because, as you realize, the work of the Foundation is absolutely dependent upon having ample funds to carry out its projected activities. It is very important to be able to report that the Department of Internal Revenue in Washington recently ruled that the Foundation is 'tax exempt,' so that anyone who makes a gift to the Foundation can consider it as a charitable deduction in full, the same as any qualified charitable deduction. This, of course, is a very important ruling, and we are happy to have it. Fellowship activities in industrial medicine apparently are increasing and gathering momentum. The Texas Company started one in Cincinnati, and Mine Safety has one at Pittsburgh. You know about the General Motors plan of having 10 combination graduate training courses in various parts of the country as soon as they can establish them and find the men. All of this indicates the momentum that is being developed in relation to graduate training. This is extremely important in connection with certification. It is our feeling now that within a year or perhaps 18 months, certification in occupational medicine can be effectuated. It is difficult to make a positive statement at this time, but it is our feeling that most of the hurdles have now been overcome, and there are good prospects for certification within that period.

"The sectional meetings which were handled by DR. KAMMER as committee chairman proved very successful at this Conference, as shown by the attendance and the interest, and it is believed that they will certainly be a permanent feature of our conventions and that new sections will be added from time to time.

"The National Exposition of Industrial and Community Health, unless plans change, will be held in Chicago in May, 1950. This is for the public, and will be held on Navy Pier. It will be something entirely new, to acquaint the public with advances in industrial medicine and health education. This will be handled by MR. HALOS, and may be an epoch-making development.

"The Counsellor districts with which you are familiar are becoming more and more active, and it is hoped that perhaps annual sectional meetings will be held in the districts. To anyone who may have a meeting in contemplation, may we suggest that you communicate with your counsellor and arrange with him to have a sectional meeting.

"A very impressive and interesting luncheon was held the other day. It was the Past-Presidents' luncheon. There are 19 living Past-Presidents of this organization, of whom 16 attended the luncheon. This Association was organized, as you know, in 1916, and the first meeting was held in Detroit. Three of those who are known to have attended the first meeting were at the luncheon—DR. MOCK, DR. GEIER, and DR. SHOUDY. It is interesting to note that in the program of that first meeting 33 years ago, there was one talk on health insurance, showing that this subject isn't so entirely new.

"DR. W. R. PATTERSON gave us a report concerning the Hawaiian Society, and talked about the complete medical care program for employees and dependents in vogue in the Islands. The program involves voluntary pre-payment plans, similar to what we would like to have developed here in this country. Management there pays about 40 to 75% of the cost.

"DR. CARL T. OLSON reported concerning the Workmen's Compensation Committee, emphasizing the fact that many state legislatures have many important bills before them. California alone has over 100 bills that have some dealing with industrial medicine, workmen's compensation insurance, and the like, showing how active the California group has to be to keep up with developments. Since the Workmen's Compensation program has such an important medical basis it is believed that all national medical organizations interested in this field should cooperate in helping guide the new developments.

"The next convention of this Association will be held in Chicago, April 23 to 29, 1950."

On a motion duly made and carried, DR. SLOBE'S report as Secretary was unanimously approved.

DR. BENJAMIN M. FREES then offered the following resolution:

"WHEREAS, under a system of free enterprise the American medical profession has established the world's highest standard of medical care, thereby helping the United States to become the healthiest major nation in the world; and,

"WHEREAS, the benefits of American medicine now are available to the majority of the people of this country and can be extended to every American through budget-basis voluntary health insurance; and,

"WHEREAS, the experience of all countries where government has assumed control of medical services has shown that there has been a gradual erosion of free enterprise and a progressive deterioration of medical standards and medical care to the detriment of the health of the people; and,

"WHEREAS, the great advances which have been made in our own specialty under the stimulus of private enterprise would be impeded by any form of Federal control of medicine, NOW, THEREFORE,

BE IT RESOLVED, That the AMERICAN ASSOCIATION OF INDUSTRIAL PHYSICIANS AND SURGEONS does hereby go on record against any form of compulsory health insurance or any system of political medicine designed for bureaucratic control; and that a copy of this resolution be forwarded to the President of the United States, and to each Senator and Representative now in the Congress of the United States, and that the said Senators and Representatives be and are hereby respectfully requested to use every effort at their command to prevent the enactment of such legislation."

DR. FREES then moved the adoption of his resolution, and upon a motion duly made and seconded it was adopted by unanimous vote, DR. VONACHEN, the chairman, remarking, "That was a very lusty AYE!"

DR. VONACHEN, as retiring President, then made a brief address, saying in part:

"We have gone a long way in certification. We have established our first Fellowship. DR. CARLETON has done a tremendous amount of work on the Foundation Committee. We haven't moved fast because we can't make a mistake, but I am entirely certain that once we have a sizeable Foundation established there is no question that we will go forward even more rapidly if we make our primary objective the education of men now in industrial medicine and those to come in the future.

"I particularly want to express my gratitude to ED HOLMBLAD. We hear that every year, but I don't think anyone can realize his worth until he has served a year with him. He is a tireless worker, and I hope that he will be spared to this organization for many years to come.

"During the year we had a meeting with all the educators of this country who were interested in industrial medicine. We had representatives from Yale, Harvard, Columbia, University of Pittsburgh, University of Cincinnati, University of Colorado, and there may be more that I have forgotten. We had a very fine meeting, and I believe that from it will come a concerted effort to try to formulate definite programs in the educational field.

"One thing that I think we should try to accomplish in our organization is to have a closer relation with management. I feel that we have lost a great opportunity in not impressing upon members of management what their medical directors are doing. One of our future projects should be to impress more and more upon the people in industry that we as physicians are contributing our time, our efforts and our brains to do things that will enable *them* to reap the harvest."

The meeting then proceeded to the election of officers and directors. The nominations were:

President, ALFRED H. WHITTAKER, of Detroit.

President-Elect, EDWARD H. CARLETON, of East Chicago, Indiana.

First Vice-President, ADOLPH G. KAMMER, of Charleston, West Virginia.

Second Vice-President, EARLE A. IRVIN, of Detroit, Michigan.

Secretary, FRED W. SLOBE, of Chicago.

Managing Director and Treasurer, EDWARD C. HOLMBLAD, of Chicago.

Director for short term to fill the unexpired term of the late EDWARD P. HELLER:

OSCAR A. SANDER, of Milwaukee.

Directors to serve 1949-1951:

CLARENCE O. SAPPINGTON, of Chicago;
JAMES H. STERNER, of Rochester, New York;
HARLEY J. KRIEGER, of Detroit, Michigan;
JEROME W. SHILLING, of Los Angeles, California;
C. RICHARD WALMER, of Pittsburgh, Pennsylvania;
VALLIANT C. BAIRD, of Houston, Texas.

Motions were then duly made that the nominations be closed, and that the unanimous ballot of the members be cast for the nominees. This was done, and the Chairman declared them duly elected. DR. VONACHEN then yielded the chair to DR. WHITTAKER, who presided while the matter of canceling a loan which the Association had made to the American Foundation was discussed and voted upon. The loan was canceled; and the meeting thereupon adjourned.

Dr. Whittaker taking over from Dr. Vonachen

Report of the Tuberculosis Committee

THE Chairman of the Tuberculosis Committee respectfully submits the following Report:

1. The revision of Diagnostic Standards and Classifications of Tuberculosis by the American Trudeau Society is nearly ready for printing. The new edition contains an excellent and thorough presentation of ideal tuberculosis standards, including detailed descriptions of laboratory work. (The New Diagnostic Standards are on such a high level that modification for industrial practice should be considered.)

The suggestion is offered that a short synopsis of the salient newly presented facts which appear in this new edition should be printed in medical journals and other publications which deal with tuberculosis, and also perhaps in a brochure for clinicians.

It is also tentatively suggested that a popular edition of the new standards might be worked up so that the nursing profession and other workers could be easily informed of the facts which make the new edition so valuable.

2. The National Tuberculosis Association's Director of its Industrial Tuberculosis Program, Mr. Jones, informed me that his organization is preparing an industrial health program among small industrial plants. The first step is to interest industrial physicians in the use of mass chest x-ray of workers as a basis for health examinations, and not necessarily strictly tuberculosis case-finding. Miniature x-rays furnish a case-finding method through which many other conditions can be discovered. Industrial plants which do not have the advantage of a full-fledged industrial health program could utilize the x-ray service as the first step in providing general medical care to the workers.

In bringing the importance of health maintenance to the attention of industrial workers, the miniature chest x-ray may open the way for further cooperation with other voluntary agencies such as the Heart Association and the Cancer Committee. In this way it is hoped eventually to develop an overall preventive medical service for industrial workers.

—LEO PRICE, M.D., Chairman,
Tuberculosis Committee.

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Is Truman's Compulsory Health Insurance "Health" or "Politics?"

AT THEIR thirty-fourth Annual Meeting at Detroit on April 7, 1949, the members of the AMERICAN ASSOCIATION OF INDUSTRIAL PHYSICIANS AND SURGEONS adopted a resolution condemning all forms of compulsory health insurance. A copy of this resolution is to be sent to every Congressman. Along with it should go certain information concerning the *industrial medical departments and facilities* in which the industries of this country have invested many millions of dollars, and the *industrial physicians and surgeons* who are devoting their professional lives to industrial medicine. The Congressmen should be made aware that, because of these medical departments and facilities, and through the work of these 3000 physicians and surgeons, more than half of all employed persons, other than those in domestic service and agriculture, are now fully protected, *at no cost to themselves,* by employer-paid medical, surgical and hospital services against the expenses of sickness and injury resulting from their work. And the Congressmen should also know:

1. That some employers are extending their employer-paid medical, surgical and hospital services to cover all employee sicknesses and injuries from non-occupational causes, while others are extending these same services also to the families and dependents of their employees, likewise at no cost to the workers;

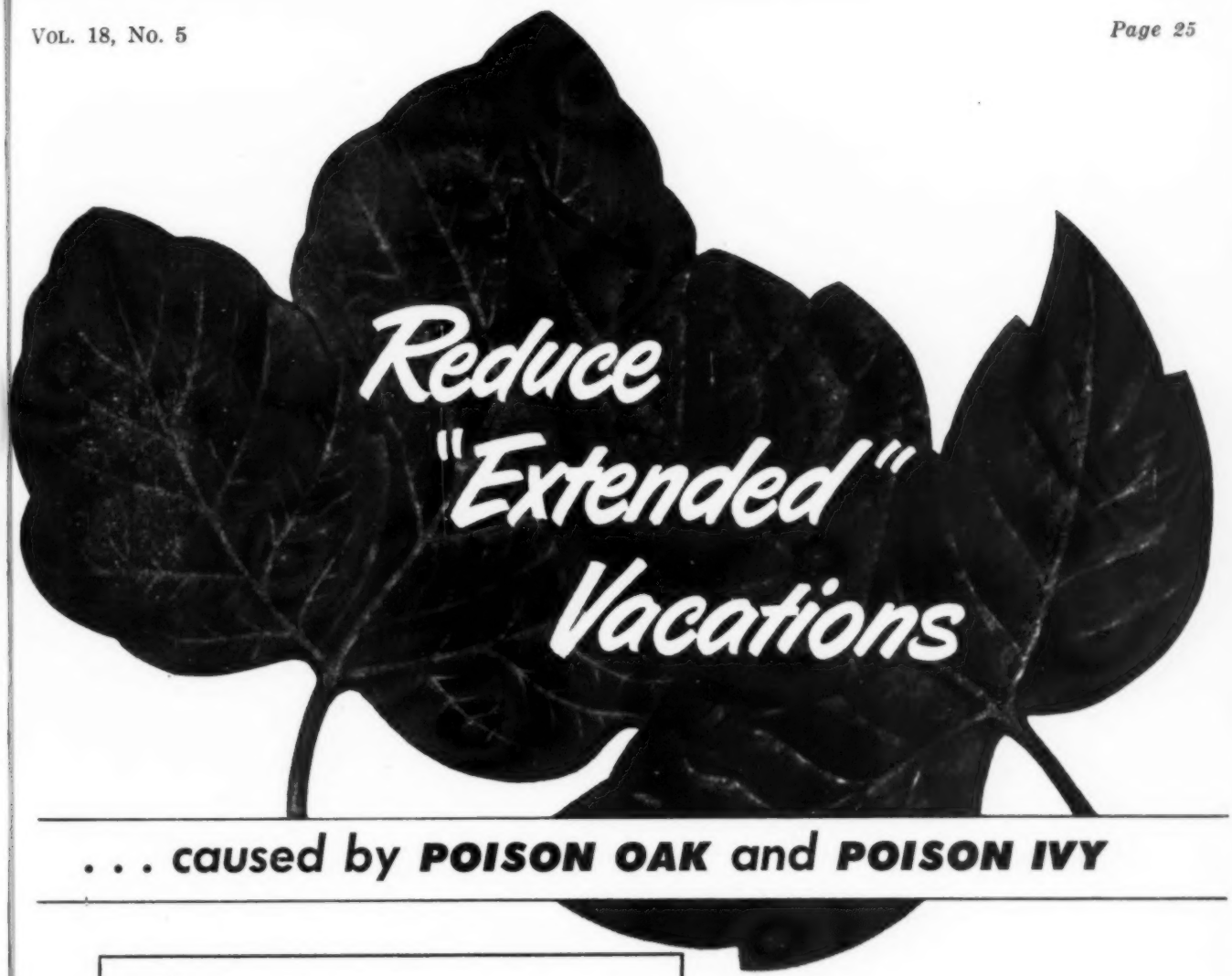
2. That further and universal extension of these medical, surgical and hospital services to cover non-occupational illnesses and injuries to employees and their families and dependents can be accomplished by existing forms of insurance by means of which complete hospitalization coverage for the employee can be had at a total cost of less than one cent per working hour, with additional medical and surgical coverage for himself, and total coverage for his family and dependents, at a comparable low cost;

3. That contributions to the payment for such medical, surgical and hospital costs are being assumed by an increasing number of employers through forms of insurance now existing, and that the contributory basis of such costs as between employer and employees is an ever-increasing subject of collective bargaining satisfactorily consummated between employers and the labor unions represented in their plants, whereby—through such bargaining and otherwise—a large and rapidly growing number of employees individually and in many instances their families and dependents are being provided with complete medical, surgical and hospital care;

4. That when such complete medical, surgical, and hospital services to their employees and to the families and dependents of such employees are apportioned on a contributory basis as between employer and employees, the total costs for the same are *less per person* than the amount of the payroll tax proposed to be paid by the employers under the so-called compulsory health insurance plan; and

5. That *even where the employee* pays the whole cost of providing non-occupational medical, surgical and hospital services for himself by his purchase of insurance arranged for him by his employer, and also pays the cost of similar services for his family and dependents by similar purchase, the total cost to him is *less* than the amount of the payroll tax that will be deducted from his earnings under the so-called compulsory health insurance plan.

Because of this, any form of compulsory health insurance that imposes a payroll tax on employees and their employers is *wholly unnecessary* as to the millions of employed persons who are now protected through the medical, surgical and hospital services furnished by their employers, and/or the combinations of such services with existing forms of insurance. Recognition of this fact by Congress will be the test of the sincerity of the administration's plans.



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NEWS, COMMENT, OPINION

Good Will

GOOD-WILL Committees, employees who make the rounds of the sick and aged, are being set up in many plants. At A. C. Gilbert Co., New Haven, Connecticut, employees even maintain a $20,000 good-will fund to provide flowers, fruits, books for ailing co-workers. Money, built up through a voluntary 25 cents a month per employee contribution, also helps sick workers to stay out of debt. Recipients are kept anonymous.

—*Employee Relations Bulletin, National Foremen's Institute*, in Connecticut General's *Notes and Quotes*, April, 1949.

Panorama

PUNCH, British humor weekly, cartoons a theater manager appealing to audience: "Is there a doctor in the house who has joined the National Health Scheme and has a vacancy on his list for a rather urgent application?". . . .Physicians, having confidence of lay people, can help them more with non-medical problems than other "counselors" can, says Socony-Vacuum Oil Company; firm has shifted its personnel relations activities from management to medical department.

—*Medical Economics*, "Panorama," March, 1949.

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— — — **see whether INCREASED VISUAL EFFICIENCY of your personnel will pay** (and the trial involves no obligation on your part.)

A sampling test, run on a group of your own employees, will show whether a Visual Testing program will give you the results that thousands of plants are reporting:

LOWER production costs and training costs; lower labor turnover; less spoilage; reduced accident and insurance rates.

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YOUR SKEPTICISM is invited; it is not necessary to accept the evidence of other plants. Write for "An Occupational Visual Job Analysis."

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The **KEYSTONE**
Occupational Visual Service

Vacation Paradox

MANY of us take our vacations at the wrong time. The traditional two weeks in the summer don't make much sense from a medical standpoint, because business naturally slackens during the hot weather and you need rest most when workloads are heavy. According to Mayo Clinic studies, deaths from heart failure are most frequent in December, January, and February in the North—and if you have only two weeks, the cold-weather months are the best time to get away from it all. Furthermore, it's better to take a few days off every now and then than to use up the entire two weeks or more in one trip.

—DR. PAUL D. WHITE in *This Week Magazine*, February, 1949.

Pointers on Human Relations

FIVE practices in the plant of Friden Calculating Machine Co., San Leandro, California, are indicative of intelligent approach to employees high and low: (1) foremen lunch with staff members, and executives, including the president, in a dining room next to the plant cafeteria, on round tables, with no "head of the table"; (2) smoking is allowed anywhere in the plant except in the washroom; special protective devices are used in hazardous places; (3) a blind man of 65 is the best inspector of small parts; (4) the company medical department gives employees such services as heat therapy for back strains, sun lamp treatment for colds, ultraviolet treatment for derma-

titis, without cost; (5) employee social life is enlivened annually by a $25-award contest for the best-decorated miniature Christmas tree on the workbenches.

—"Five Pointers on Human Relations," in *Modern Ind.*, February, 1949; abstr. in *Industrial . Hygiene Digest*, March, 1949.

Silicosis

QUESTION: Can you give me any information about a new cure for silicosis developed at Jefferson Medical College Hospital? — M.D., South Carolina. ANSWER: *By Consultant in Industrial Medicine:* The treatment for silicosis now being employed at the Barton Memorial Division of the Jefferson Hospital, Philadelphia, concerns the use of intermittent positive pressure with oxygen and neosynephrine or isuprel, introduced as aerosols. The apparatus is essentially a cycling valve, with an atomizer and valve-adjusting devices. The treatments provide symptomatic relief from dyspnea and cough and are given for 15 minutes, two or three times daily, for periods of four to eight weeks. The details of the technic and the physiologic problems of silicosis are reported in the *Journal of Aviation Medicine* (Nov. 1948) and in *American Medicine* (Dec. 1948).

—*Modern Medicine*, March 1, 1949.

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★ A high degree of absorption

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★ A desirable temperature ratio of fat to vascular tissue

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Monday Hangover

COMPANY was charged with lockout, in violation of labor contract, when it closed plant on Monday in an effort to reduce absenteeism. During previous Mondays, about 10% of the employees generally absented themselves. Company complained to the union without success. On Friday before the shutdown, the company informed the union that the plant would be closed on Monday because continued absenteeism made it uneconomical to operate on Mondays. Union claimed that this was a lockout because it resulted in the punishment of the innocent employees along with the guilty. It argued that any shutdown of the plant by the company to "compel a course of conduct" by the employees constitutes a lockout. Arbitrator held this was not a lockout. He said: "It is undisputed that the shutdown of the plant which took place on April 5, 1948, was occasioned by economic considerations. That it was unprofitable to operate on Mondays appeared not only by the uncontradicted testimony but by the fact that several weeks later the company discontinued Monday operations entirely." (Union Radio Corp. & United Electrical, Radio & Machine Workers. August 10, 1948.)

—*Industrial Hygiene Digest*, March, 1949.

Hoover on Industrial Hygiene

THE recent report of the Hoover Commission on the Department of Labor includes the following recommendation on Industrial Hygiene: "The Commission recommends that a detailed study be made of industrial hygiene functions to work out a logical division of functions between labor and health agencies." In discussing this recommendation the report states: "The recent Federal policy in grants to the states for industrial hygiene work has created serious imbalance in state programs and is closely related to established Department of Labor functions and programs. The Public Health Service Administration of grants to state health departments on a two-for-one basis has led the states to build up their health departments and to let the industrial hygiene work of their labor agencies

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atrophy. This is a serious situation inasmuch as the actual inspection and administration of industrial hygiene and labor standards generally is traditionally part of the state labor agencies' factory inspection and labor work generally. At the Federal level, the centering of grants for industrial hygiene in the Public Health Service overlaps the responsibility of the Bureau of Labor Standards and the Wage and Hour Division in the Department of Labor. The former is responsible for working with state labor agencies, trade unions and others in developing and promoting standards of safety and health. It assists in the preparation, among other labor laws, of state industrial safety codes. The Wage and Hour and Public Contracts Division have a field service including a factory inspection service to administer the Fair Labor Standards Act and the Walsh-Healey Act (public contracts). The imbalance between state labor and health agencies would be corrected by a better allocation of functions on the Federal level."

—*Industrial Hygiene Digest.*

It's Your Life

IT'S YOUR LIFE, Chicago's outstanding health documentary radio series, which had been heard at 11:15 A.M. daily on WMAQ began to be aired every Sunday at 3:30 to 4:00 P.M., starting April 17. The new schedule was arranged by popular demand to a time more convenient for the show's vast listening audience. By its twenty-sixth week on the air, IT'S YOUR LIFE had won three distinctive awards for excellence, including the medal for "outstanding contribution to radio as a social force" in the 1948 Annual Advertising Awards; and had been voted "the outstanding radio program of 1948" by the Annual Radio-Television Business Conference. The opening program of the new series was "Having Her Baby at Home," the dramatic story of how the Chicago Maternity Center operates 24 hours a day, on call, to deliver babies in Chicago homes. Listeners heard the preparation, tape-recorded at the Center offices; followed producer BEN PARK and interviewer DON HERBERT, to the home where the baby was born. They heard the doctor's talk to the prospective mother and, finally, as a climax, the first cries of the new-born baby.

How to Avoid Socialism

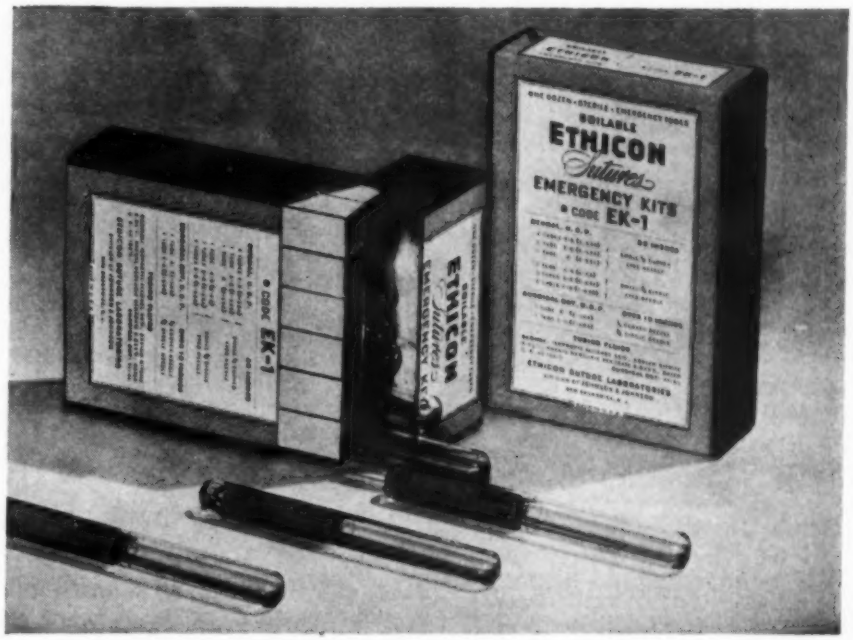
THE author describes conditions and attitudes in several European countries that may lead to socialism: conservatism and the gulf between the employer and the worker in Great Britain; the same, plus the contemptuous attitude toward the government in France; and the same, plus the dependence upon government in Italy. He finds that the United States is further away from socialism than any other country in the world, because the American business man has become social-minded and aware of his responsibilities. "The American business man is also learning to regard the worker as a person and a human being instead of just a number on the payroll. Much of industry has discovered that the good will of the worker is an asset; it's good business to have it, because the

worker who thinks he's getting a square deal from the boss is always the best producer. It's a small plant indeed today without a personnel officer whose duty is not to hire and fire but to build worker good will—to give the worker a sense of 'belonging' to the organization. . . .If business doesn't want more government in business—and I don't—the way out isn't too tough. As business attains greater social-mindedness, there will be less social legislation. The voluntary way is wide open to industry. Let it turn loose its genius for invention and ingenuity on the social side as it has on the technical side. Technically, we in industry have hardly warmed up a new machine before the blueprints of a better one are on the drawing board. We can—and we must—do the same in our social thinking. I say it would be 'good business' to do so. The great challenge—the great opportunity—before the American businessman today is to find new ways to diffuse the benefits of capitalism among more people. I am not talking about sharing the wealth. I am talking about creating new wealth to share."

—"How America Can Avoid Socialism," by E. JOHNSTON, *Fortune*, February, 1949; abstr. in *Industrial Hygiene Digest*, March, 1949.

The Top o' the Marnin'

IN IRELAND a hospital for the poor called Broin Bearg was established by Princess Mocha 300 years before the birth of Christ and seven centuries before St. Patrick brought Christianity to Ireland. The clan system prevailed in government and each clan was required by the old Brehon Laws to provide doctors whose homes were large enough to give medical and hospital care to the poor who needed it. One consequence of this system was a belief among the Irish that hospitals were only for those who were paupers or had no one at home capable of taking care of them. Many of our older members remember how hard it was up to 25 or 30 years ago to get Irish patients to agree to go to hospitals because of a survival of this belief. The Brehon Laws required that hospitals be built on the banks of running streams because of the conviction that cleanliness was necessary for the cure of disease. The Laws also prescribed that all hospitals must have doors on four sides of the building, the one on the side of that day's prevailing wind to be kept open day and night. This was because fresh air was thought to be the best treatment for tuberculosis, a disease which has always prevailed throughout the Emerald Isle. The present day ventilating "half door" of the Irish cottage survives this idea. It keeps the livestock out but lets fresh air into the homes of the poor. Every physician was required to keep one to four medical students in his home and to teach them how to treat and nurse the sick. It was this method



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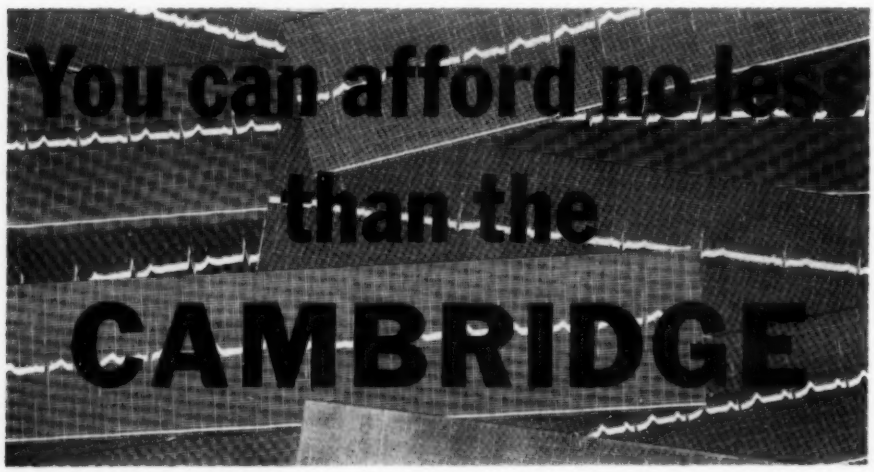
which aided in establishing bedside training as a major branch in the subsequent centers of medical education in the Land of Saints and Scholars, and produced such master clinicians as Graves, Stokes and Corrigan. Corrigan's great studies were made in his six-bed hospital on Jervis Street where, although he was a poor man, he sometimes paid heart patients for the privilege of studying the progress of their diseases and his treatment of them. Stokes got some of his knowledge by translating Gaelic documents—as old as the Papyrus of Ebers. One precious and very interesting bit of knowledge thus obtained was that, "for the peace of mind of the sick, dogs, fools and female scolds must be kept away from them." One brain operation described in these documents, which the modern brain surgeon has not been able to equal—or, if he has, the front page of the lay press has not yet carried its description—was "the removal of the organ of forgetting for the restoration of lost memory after apoplexy." The ancient Brehon Laws required that fees of doctors be regulated not according to the disease treated or the service rendered but according to the ability of patients to pay. For treating a King—and Ireland was full of them—a leech was allowed 100 cows, for a Bishop 40 cows, for the lower social class one or two cows and for the poor the fee was gratitude from the recipient of the kindness. The Law also defined quackery and malpractice and provided for the punishment of one and recovery of damages for the other. In the British Museum there is a manuscript on "The Life of Kentigern" written between 1185 and 1199 describing "a drink of oblivion called lethargion" made up of mandrake and other materials whose purpose was "to produce sleep before cuttings and punctures in order that there might not be pain with them."

—R. E. K. in *Weekly Bulletin of the St. Louis Medical Society*, March 25, 1949.



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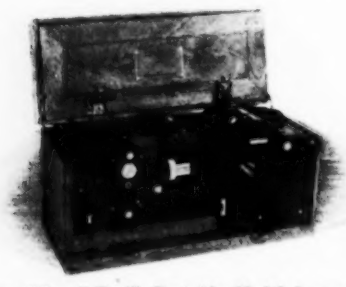

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Briefs

PROBLEMS of alcoholism among industrial employees will be studied under the expansion program of the Yale Plan Clinic, which has been inaugurated as a consultant service to assist industry. The clinic aims to aid industry in determining the extent of alcoholism within a company, particularly in the early or incipient form, which is usually not apparent. Industries will be assisted in evaluating the loss in dollars and production, as well as in employee morale resulting from alcoholism *(Industrial Hygiene Newsletter)* ....Findings most frequently noted in annual employee health examinations are bad health habits, overweight, malnutrition from faulty diet, too much or too little exercise, worry, lack of rest and relaxation. These result in functional disturbances, especially affecting the digestive tract, circulatory and nervous systems. (DR. H. M. HARRISON, Canadian Medical Institute). . . .A synthetic chemical, made to relieve hay-fever, hives and other allergies has turned into probably the best remedy and preventive yet found for seasickness and other forms of motion sickness. The chemical is called Dramamine. Findings were reported by DRS. LESLIE N.

GAY and PAUL CARLINER, of the Johns Hopkins Hospital, at a meeting of the Johns Hopkins Medical Society in Baltimore *(Science News Letter)*.... "Today's trend is toward recognition of the principle that a worker's life and health are exposed to physical deterioration and destruction in industry, just as machinery is exposed to wear and tear, breakage and depreciation. Perhaps there is no better impetus to the acceptance of this principle than the recent development of health and welfare programs in industry." (DR. LEO PRICE, Union Health Center).

—*Health on the Job*, March, 1949.

Trends

ANOTHER important trend in social thinking is presented by the large corporations and labor unions. If 1¼% of employers in this country employ 55% of the labor, their expression of the medical and health problem becomes a major concern of the medical profession. The United Auto Workers are expected to put their main emphasis in contract talks next year on Social Security protection. This means, exclusive of pensions and death benefits, that their new standards will include income maintenance during occupational sickness or accident disability; hospitalization protection (the union wants insurance that will cover the full payment of all hospital costs for a period of at least 72 days); and medical and surgical protection. As minimum standards, the union seeks full payment of the costs of physicians' services to the worker and his family; eventually, the union wants a system of clinics financed on a pre-payment basis. There is every indication that management will give considerable thought to these demands and obviously their conclusions will have a direct effect on the physicians. It is interesting to note that insurance counsels are now advising health coverage on a national level rather than on a regional or sectional basis

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[*From ARCHIVES OF DERMATOLOGY & SYPHILOLOGY, April 1942, pp. 670-675*]

1. Athlete's Foot develops not from exposure to new germs but from lowering of resistance to the germs almost always carried on the feet.
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for hospital and medical services. This is indeed far from what we are thinking and yet close to the idea of national insurance, if not on a voluntary basis, then the only alternative, compulsory health insurance. This comes from the larger corporations, possibly coerced by the labor unions. Therefore, our problem remains static, in spite of the national political complexion.

—From "Social and Economic Aspects of the Practice of Medicine," by THEODORE R. FETTER, M.D., in *Pennsylvania Med. J.*, November, 1948.

On-the-Job Eating

BEFORE the war, GE didn't even try to feed workers at the electrical appliance plant in Bridgeport, Connecticut. Operations were too spread-out. By the outbreak of World War II, there were 94 acres of plant divided into departments making vacuum cleaners, fans, home freezers, stoves, and dozens of other home products. As late as 1942, workers brought lunches from home or ate in restaurants in the neighborhood. World War II put Bridgeport's short assembly lines on work that could not be shut down while workers went to lunch. The problem was to serve a hot midshift meal in as little time as possible. In 1942, GE set up an employee service restaurant which delivered light lunches to workers at their posts of duty, so that they could eat comfortably in 18 minutes. Since lunch-time was paid time, the responsibility for fast and efficient service rested on the company. FLORENCE TOTH, who undertook the food service, started out with mobile carts which stopped at each area dispensing hot soup and coffee in paper containers from insulated jugs and sold sandwiches, cakes, and pies. Workers and production men liked on-the-job eating so well that it has been retained since the end of the war for workers on 40 round-the-clock operations. Today Bridgeport employs 9,000 to 10,000 men and women, of whom 1,200 get their mid-shift meal on the job. MISS TOTH is currently trying out a takeout system which is better adapted to the plant's unusual requirements because it is more flexible and keeps food hotter. Under this arrangement, each lunch takes a shorter trip from kitchen to diner. Just before meal time—10:30 for the day shift, 6:00 o'clock for the night shift—a worker whom the foreman can spare takes orders in his department and brings them to the sandwich room of the central cafeteria on the fifth floor. There he reads the orders to four women servers, helps pack the assembled and labelled lunches in boxes, and rolls all of them back to the department on a little wooden wagon. Sandwiches are wrapped in paper, cakes and pies served on paper plates. Hot tea, coffee, and the day's soup are packed in eight-ounce paper containers. Especially popular with assembly line workers are the more nutritious soups, such as navy bean, Philadelphia pepper pot, and clam chowder. All food is prepared in the central cafeteria maintained for administrative personnel and workers whose jobs allow them a longer lunch hour, but there are two coffee stations in the plant where workers who have missed their breakfast can drop in for coffee; 150 gallons of coffee and 1,000 paper cups a day keep the plant going.

The Accident Prone

IN SUMMARY, the accident-prone individual is an impetuous person who converts immediately into action his momentary impulses without deliberation and planning. He harbors a deeply ingrained rebellion against the early excessive regulations of his upbringing—a deep resentment against persons in authority. At the same time he has a strict conscience which makes him feel guilty for this rebellion. In the unconsciously provoked accident he expresses his resentment and revenge, at the same time atoning for his rebellion by his injury. Since the major factors in accidents are not external, but lie in the person who has the accident, the primary measures must be directed toward the person. There are only two effective ways to approach this human factor: One is to change the individual and the other, to take the accident-prone person away from those occupations where the danger is great. Both measures require reliable methods by which the accident-prone individual can be spotted. Because the psychological factors which predispose an individual to accidents are not simple isolated qualities, the only reliable method is the psychiatric interview, conducted by an expert, which reveals the whole previous life history of a person. The accident habit develops early in life and manifests itself in the youngster in a noticeable inclination to contract physical injuries, even if only minor. Also, the combination of excessive resentment and guilt manifests itself in early childhood in the various ways familiar to the trained psychiatrist. To alter such an ingrained emotional pattern as is characteristic for the accident-prone individual by psychotherapy is a major therapeutic task. It requires prolonged treatment and is, therefore, in the present state of psychiatric facilities, of no practical significance. The recognition of the accident-prone person and his removal from occupations which are dangerous for him and for the public is the only effective measure.

—FRANZ ALEXANDER, M.D., in *Public Health Reports.*

See page 4 for announcement of
1949 Railway Surgeons Meeting
1950 Meeting of AAIP&S

DR. PILGRIM

NOW writing up the proceedings of various meetings, and in the meantime listening to the New York Philharmonic presentation of a series of Beethoven programs including at various times the First and Third, the Concerto No. 5 for piano, the Second Symphony, the violin concerto in D, the Eighth Symphony, the Fourth and Seventh, and the Fifth and Sixth—these presented on the various Sunday afternoon programs, under the direction of Bruno Walter....AND driving out to a local foundry for an inspection and conferences on a medicolegal problem, and finding not the slightest evidence of any difficulty as far as could be seen, but arranging for a later survey; and in the meantime in editorial work on certain very important

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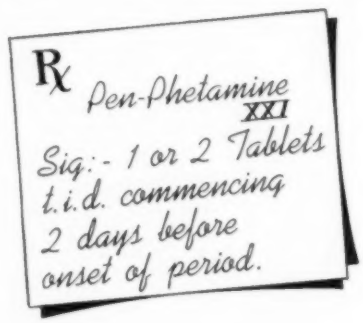

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principles with regard to the preservation of health. . . .AND, after some absence, resuming rehearsals with the Chicago Business Men's Symphony Orchestra, and receiving warm felicitations on the part of many of the players . . . .AND again to a local manufacturing group for the gathering of dust samples for analysis with respect to possible difficulties arising out of a claim, but no evidence of any more dust than one would find in an office, a store or a bank; in fact no evidence of any sort of difficulty. . . .AND luncheon with DR. EARL THOMAS and DR. DAVIES, one of his young assistants, and discussing the problems of industrial dentistry and the work of various organizations, in preparation for material to be given at the annual meeting. . . .AND in the laboratory on dust samples and from time to time listening to the broadcasts "It's Your Life," remembering particularly the anecdote told by the druggist, in which an old lady came into the store and asked for a dozen ½ gr. strychnine tablets—at which the druggist questioned her and she said "Well, I have been using them in my coffee for a long time," to which the druggist replied "You wouldn't mean saccharine, would you?" and the old lady answered, "Yes, that's right"; and then later hearing many broadcasts of the same program and marveling at the great results in the training of quadriplegics, and what they can do . . . .AND presiding at the meeting of the board of directors of Chicago Section of the AMERICAN INDUSTRIAL HYGIENE ASSOCIATION, at which were present MESSRS. WALWORTH, SALLEE, COOK, WEBER, SCHOLTZ, WYMAN, VAN ATTA, and DR. WATROUS, the latter telling a story concerning a rabbi, a priest and a Christian Scientist, who were being carried across the River Styx—the rabbi confessing that his weakness was eating, and especially eating pork, and the priest saying that he became enamoured of a very attractive woman; and both then proceeding to the corner of the boat where the Christian Scientist sat alone, and asking him why he was there, to which he replied: "Who, me? I'm *not* here!" . . . .AND greatly enjoying the broadcasts of Toscanini's excerpts of Aida, Acts 1 and 2 in one broadcast and the 3rd and 4th Acts in a subsequent one—it seeming that even as an octogenarian, he is a very capable conductor; and reading meanwhile with great interest MR. HARRY NELSON'S digest of the workmen's compensation law of the State of Wisconsin, and FRANK PATTY'S paper on the relationship of industrial hygiene to industrial medicine . . . .AND meeting BROTHER BYRON and SISTER OLGA at the station, coming back from their Arizona vacation, and driving to Kungsholme for a leisurely lunch and then again to the station to see them off on the Twilight Limited; and later in the day sojourning to Galesburg where met by automobile and going to another smaller town at which, next morning, there was a compensation hearing at the court house, where once again it was definitely shown that there are great

differences of professional opinion in compensation cases; and meanwhile reading John Gunther's "Death Be Not Proud," and feeling that it is indeed a great story of one who had unlimited courage....AND again at the desk, with routine relieved by a very pleasant visit with PERCY SHOSTAC and MRS. GRUNSFELD concerning a publication on industrial health ....AND to Detroit with MADAME PILGRIM for the annual meetings of the five industrial professional groups, the governmental hygienists, the physicians and surgeons, the industrial hygienists, the nurses, and the dentists; and first to the physicians' meeting of the governmental hygienists, and here seeing many old friends including DRS. BREHM, MARKUSON, DYKTOR, HEIMAN, SPOLYAR, and NASATIR, and JACK BLOOMFIELD; and then for a ride to Windsor with STEVE and MARIETTA HALOS and DOROTHY HOOPER, and later a short session at pasteboard mathematics; and next day to a summary session of the governmental group, where ALBERT GRAY insisted that the reporters giving the summaries actually tell what was done and what was decided rather than merely naming the subjects discussed, this livening up the meeting considerably; and afterward seeing DRS. ERNEST BROWN, HUSSEY, TOWNSEND, and VORWALD and exchanging stories and experiences; and visiting the General Motors group, including DRS. LECKLIDER, IRVIN, DeJONGH, and SAMUELSON, and MAX SCHUSTER, and many others....AND then to the General Motors Medical luncheon and afterward to the afternoon session, at which were many fine discussions, especially the demonstration and motion picture of rehabilitation activities, by DR. A. R. THOMPSON, of London; and then to the headquarters hotel and to the fellowship hour and the dinner given by the General Motors group, at which MESSRS. JACOBY and MEYER talked about health maintenance and DR. SELBY spoke on medical research and its bringing of better health to more people....AND next day to the section meeting on General Manufacturing, and a hearty welcome from DR. MARION JOCZ, the chairman, this being an overflow meeting and having to change location; and finally sitting next to DR. VICTOR HEISER and DR. GLENN GARDINER, and later lunching with DRS. WATROUS and SCHURZ; and, after while, at dinner with DR. and MRS. LAUTEN, DR. DAVIES, and STEVE and MRS. HALOS and MRS. HOOPER....AND then, next morning to the panel on cardiovascular diseases which was the best panel ever (and this means after an extensive experience with this type of presentation); and using an outline during the panel which itself was of great excellence; and this being followed by a luncheon with DRS. PETERSON, and HUSSEY, and TED WATERS, with much talk of plans of the Committee on Workmen's Compensation; and in the evening to KATE and BILL FULTON'S home for dinner, where their three boys, ED, BILL and JOHNNIE made us welcome, and where after a little music, we talked much of BILL'S father who was an excellent public health officer in Baltimore during the

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time of WELCH. . . . AND learning from MADAME PILGRIM how much she enjoyed the many trips and types of entertainment arranged for the women attending the convention. . . AND then to the meeting of the AMERICAN ASSOCIATION OF INDUSTRIAL DENTISTS where PILGRIM represented the AMERICAN INDUSTRIAL HYGIENE ASSOCIATION and talked concerning "The Functions of Industrial Hygiene and Their Relationship to Industrial Dentistry," and where were most interesting discussions and the establishment of ideas which will eventually lead to the publication of important experiences; and in the evening to the annual dinner of the various associations and seeing, after a long time, DR. MILTON KRONENBERG, and several others; and sitting at the press table with DR. JOHN PRENDERGAST and many representatives of the group, and noting the great interest in the presentations of the various awards; and remarking on the reproduction (with the Banquet program) of a copy of the program of the First Annual Meeting of the AMERICAN ASSOCIATION OF INDUSTRIAL PHYSICIANS AND SURGEONS, on Monday, June 12, 1916, at Detroit; and impressed by the recognition of the founders, and the response thereto by the redoubtable DR. HARRY E MOCK, SR. . . . AND next day to the Texaco Medical Conference, where were many subjects of interest, and speaking

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on "Social and Economic Trends in the Practice of Medicine and How They May Affect Industry," and here meeting DR. ROBERT KEHOE who spoke on "The Carcinogenicity of Petroleum and Petroleum Products," and at the luncheon with DRS. NEWQUIST and KEHOE and listening to the experiences of DR. R. C. PAGE in Saudi Arabia, with many tales entertainingly told; and in the evening to the Detroit Athletic Club with BROTHER BYRON, SISTER OLGA and NEPHEW LEWIS and MADAME PILGRIM for dinner, and thence driving to Birmingham where sojourned for several days, taking a much needed rest, and where was considerable music, both on the piano and records, including recent excerpts from "Kiss Me Kate" now playing on Broadway; and later to the MOFFETTS for supper and to see the kodachrome views of a recent European trip....AND then home and back to the routine, to be broken again by events of which more later, meanwhile noting the press item that the Christian Scientists are asking exemption from the operation of Harry's "cradle-to-grave" health program on *constitutional* grounds, which should be a tip-off to Congress...

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*BOEHME, E. J.	The Treatment of Chronic Leg Ulcers	The Lahey Clinic Bulletin, 4:242 (1946)
BOWERS, WARNER F.	Chlorophyll in Wound Healing and Suppurative Disease	Amer. J. Surgery, LXXIII:37 (1947)
CADY, JOS. B. and MORGAN, W. S.	Treatment of Chronic Ulcers with Chlorophyll	Amer. J. Surgery, LXXV:4 (1948)
JOHNSON, HAROLD M.	Dermatologic evaluation . . .	Arch. Dermat. & Syph. 57:348 (1948)
LANGLEY, W. D. and MORGAN, W. S.	Chlorophyll in the Treatment of Dermatoses	Penn. Med. Journal Vol. 51; No. 1 (1948)
RAFSKY, HENRY A. and KREIGER, CHARLES I.	Treatment of Intestinal Diseases with solutions of w. s. Chlorophyll	Rev. Gastroent Vol. 15:549 (1948)

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* Philpott, N. W., Hendelman, M., and Primrose, T.: Methionine in Obstetrics. Am. Jr. Obst. & Gynec. 57:125-142 Jan. 1949

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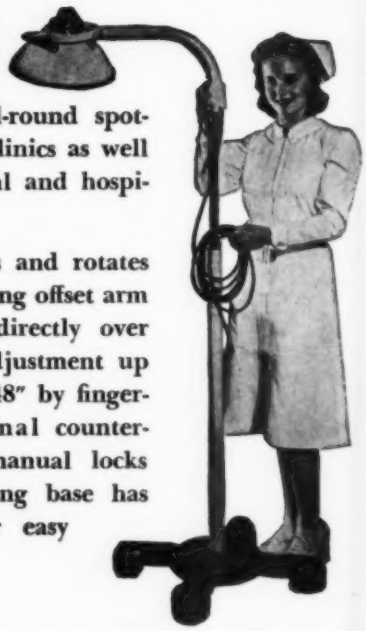

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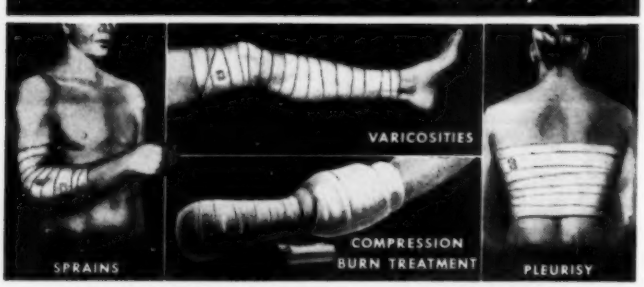

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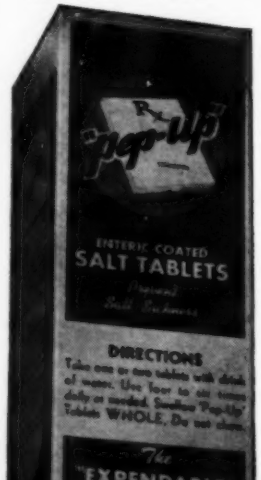

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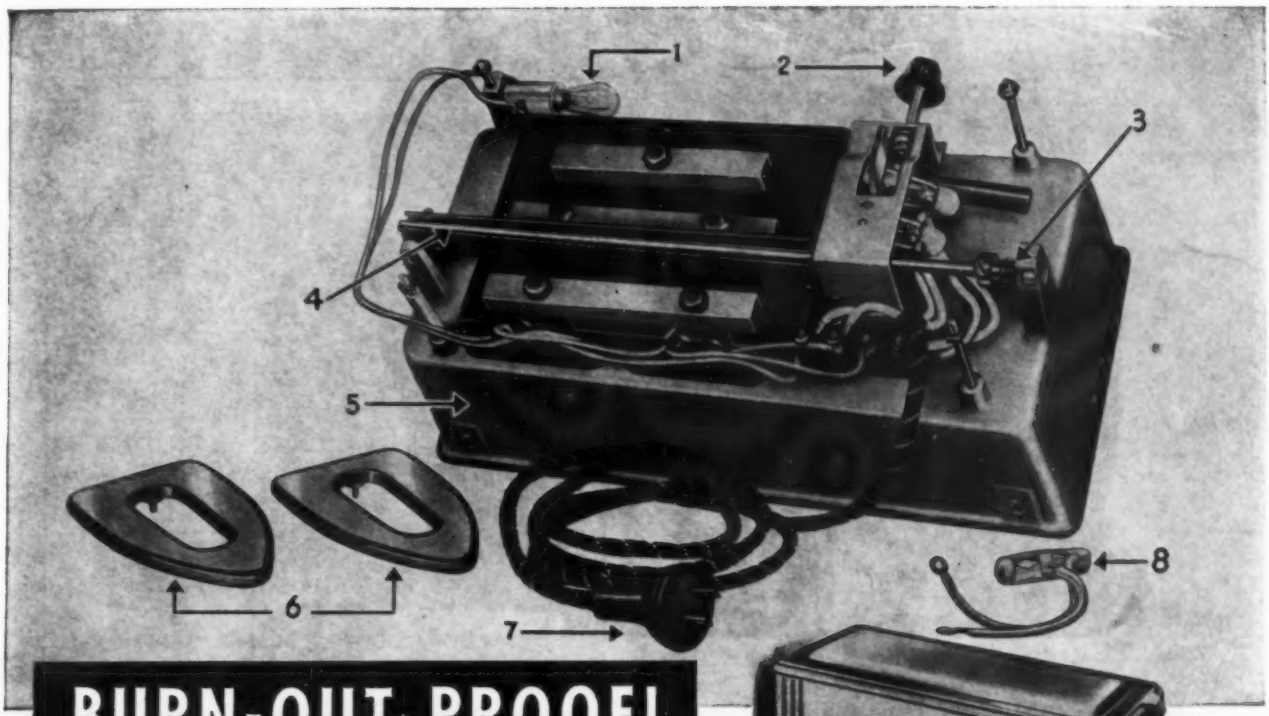

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A safety measure protecting both sterilizer and instruments featured exclusively in

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2 CONTROL SWITCH—A Bakelite handle actuates hermetically sealed mercury switches. When switch is on, full heat is applied until water simmers, then heat automatically reduces to maintain mild boiling. If water depletes, all heat is cut off permanently.

3 CONTROL ROD, mounted in tension on sterilizing chamber, controls mercury switch with positive setting at boiling point or complete cut-off when chamber is dry.

4 THERMOSTATIC CONTROL—Instead of bi-metal thermostats, the mercury switches are controlled off and on through the control rod by the expansion and contraction of the sterilizer chamber.

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6 HEATERS — There are two elements, refractory cement embedded, chromium steel clad . . . a more durable construction designed for dry burning such as laundry type flat iron service.

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The "American" Small Instrument Sterilizer provides automatic "burn-out-proof" safety. If water becomes exhausted below the critical level, a complete automatic cut-off of current occurs. Functional operation can only be resumed by replenishing water in the chamber and manually switching on the current again.

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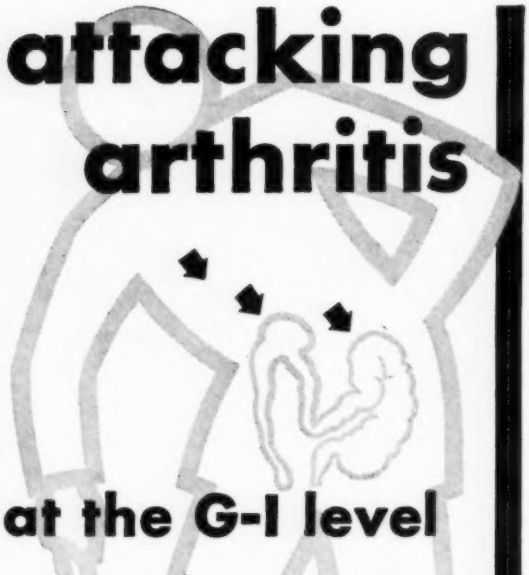

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*Nuzum, F. R.: In Diseases of the Digestive System, ed. by S. A. Portis, Lea & Febiger, 1944.

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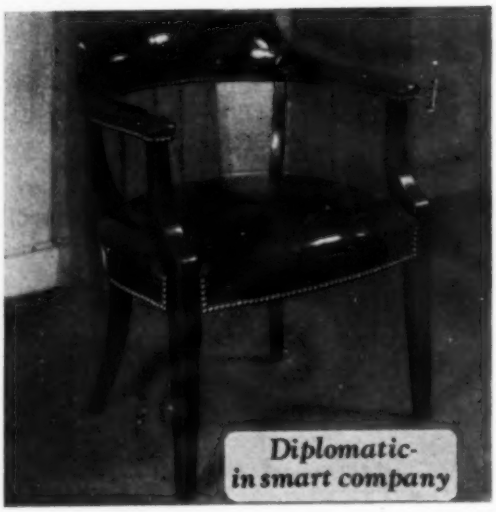
occy-crystine

the sulfur-bearing saline eliminant



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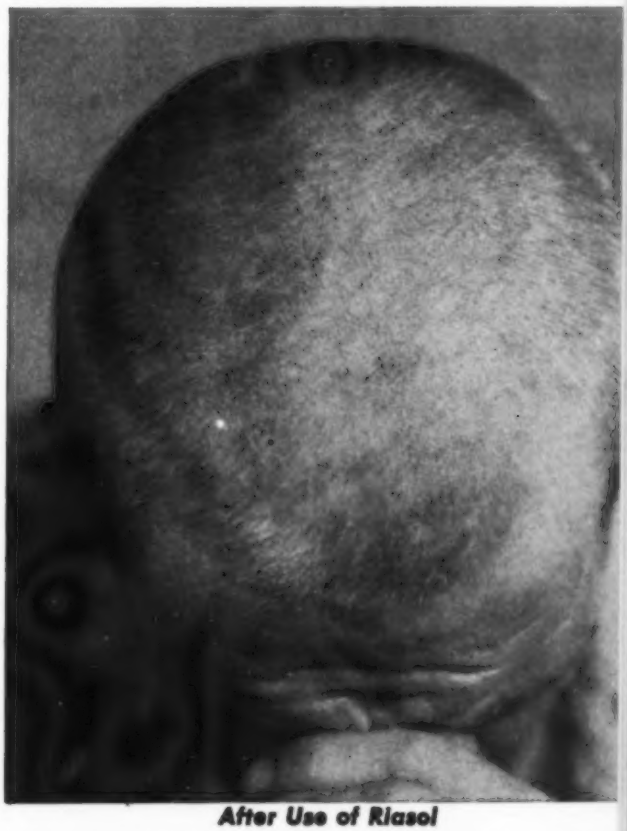

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An Outstanding Scabicide and Pediculicide

* 1. Cannon, A. Benson, and McRae, Marvin E.: Treatment of Scabies, J.A.M.A. *138*:557 (Oct. 23) 1948.

2. Wooldridge, W. E.: The Gamma Isomer of Hexachlorocyclohexane in the Treatment of Scabies, J. Invest. Dermat. *10*:363 (May) 1948.

3. Niedelman, M. L.: Treatment of Common Skin Diseases in Infants and Children, J. Pediat. *32*:566 (May) 1948.

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- *Literature on request.*

1. Habel, J. M., Jr.: Va. Med. Monthly, October 1948.

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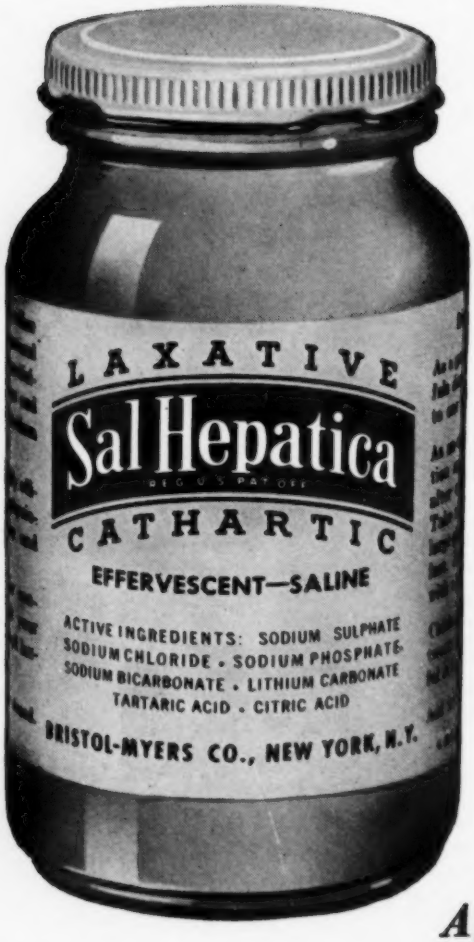

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